

## mathNEWS

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## “WHAT’S THE BEST WAY TO DISTRIBUTE mathNEWS OFF-CAMPUS?”

So I was standing outside the Computer Science Club office a week ago, minding my business, when an anonymous informant pulled me aside to inform me of something terrible. *Vile*, even. If you need to stop reading this issue after this and talk to a friend, I understand. Grief counselling is available in MC 3030 for those so afflicted.

I’ll keep it short: two weeks ago, the CSC’s executive team held a private bonfire and, in their blind stupor, grabbed a bunch of copies of **mathNEWS** 152.5 and set them alight in the Laurel Creek fire pit. My source tells me that they were *going* to use Imprint issues, but some wires got crossed and they instead used **mathNEWS** issues.

Frankly, this is unconscionable. There’s no way anyone can grab, let alone *look at*, issues of **mathNEWS**, and mistake them for Imprint. I also won’t buy an excuse that there were no copies of Imprint left, the rationale being that this outcome is statistically impossible.

So, CSC, your invoice is attached. Pay up. We’re in between banks right now, so cash only. MC 3030.

Adjacent to this whole debacle, did you hear that **Imprint is dead now!**? Well, kind of. They’re quietly switching to online-only news and a monthly *magazine* instead. I guess it was only a matter of time—most people go on Reddit or whatever to hear about what’s happening locally. A secondary consequence of this is that people will need a new source of firestarter soon. Well, I *did* catch wind the other week that the Iron Warrior is looking to get back into printing...

This issue also brings some sad news: yesterday was the **final** day of operations for the beloved Lobster Burger Bar in the University Plaza. After two long(?) years of its mildly objectionable occupation of the prime spot in the Plaza, it’s finally going under. Rumor has it, they’re renovating the place into some sort of Asian cuisine restaurant. I guess the analysts at the LBB finally came to the conclusion that, for some reason, University of Waterloo students and Fresh Lobster aren’t a good match. Obituary on pg. 40. Please send flowers and condolences to MC 3030.

evaluatED  
Editor, mathNEWS

distractED  
Editor, mathNEWS

- \_\_INIT\_\_ | The new 17 GO bus, which stops at both Guelph and McMaster
- MOLASSES | 1. send it to your parents 2. ??? 3. world domination
- TENDSTOFORTYTWO | Tie it to the feet of nearby geese, they’ll migrate the **mathNEWS** with them.
- DICK SMITHERS | We sneakily replace the machines that make The New York Times with the machines that make **mathNEWS**
- WINK WONK | nuclear bomb filled with **mathNEWS** issues
- HOTFEMOID | mix cold water and flour, then add to boiling water. place mathnews page on a wall or pole. cover entire surface with wheatpaste mixture.
- CUTLET | by PDF
- LWO | Carrier pigeons, carrier owls, or, if need to be quick, fax machine
- GOLDEN | Send 1,000 issues with me when I go to UBC and I’ll throw them at strangers.
- NORMALPARAMETERS | make friends at every university in the world
- ALYSSNYA | dropped from a plane like airborne leaflet propaganda (apparently this is the term they use)
- BOLDBLAZER | Ask to borrow one of NASA’s transmitters and send **mathNEWS** to outer space
- PREDAP | Carrier goose
- WATER | orbital bombardment
- CLAWS DOWN | missionaries
- LABYRINTH | Let Mr. Goose fly around the world and distribute copies!
- BE’F UN-WELLINGTON | ☹ multi-level marketing ☹
- BLINCHIK | Digitally, as ionizing radiation (worldwide)
- LEMMAN | B-152s dropping thousands over enemy trenches
- EVALUATED | Letterbomb
- DISTRACTED | reverse pickpocketing
- AWED | Selling at auction!

## ARTICLE OF THE ISSUE

mrow meow **mathMEWS** AOTI!! mew mew Conestoga Mall gift card MeowC 3030 (editor often present). mrowr congrats!!

Tip: The lookAHEAD has a fake holiday on August 12<sup>th</sup>.

EVAN GIRARDIN, mathNEWS EDITOR FOR SPRING 2023  
ALONG WITH DANIEL MATLIN AND AWAB QURESHI

# mathASKS 152.6

## FEATURING PROFESSOR BRAD LUSHMAN

### LWO: WHAT'S YOUR FAVOURITE ZELDA GAME?

Oracle of Ages. I have mostly preferred the 2D titles over the 3D titles, but I'd say my top 3D title is Majora's Mask.

### TR1E: WHAT DO YOU THINK OF TEARS OF THE KINGDOM?

My opinion is mixed. On the one hand, it's a mindblowing piece of software. And it seems to have done a really good job of "completing" the world of Breath of the Wild, including bringing back some elements from earlier games that had been absent for a while. And it's a lot of fun. But on the other hand, it's too easy. I'm not big on combat, so I don't mean that. But there aren't a lot of "head scratchers" in the game. Most things are pretty straightforward. In some of the earlier games, I'd routinely get stuck on one step of a dungeon, and be stalled for months. I generally view looking up answers online as cheating. I would rather be stuck for months than do that. Eventually I figure it out. I still carry a grudge against some of the titles that have done that to me. But I also appreciate the challenge in retrospect, and I take a fair bit of responsibility for many of my instances of getting stuck. Maybe there's a sweet spot somewhere in between.

### AAQSR: SO I KNOW YOU PROBABLY LOVE TEARS OF THE KINGDOM. WHERE DO YOU THINK THE ZELDA FRANCHISE SHOULD GO NEXT?

Look at all these Zelda questions. It may interest you to know that prior to 2018, I hadn't played any of the games (other than the original, for about 5 minutes in 1989). But then two friends of mine were always talking about Zelda, so I broke down and started playing. But I stipulated that I had to play them in release order. And I did. All of them. So had it not been for a little bit of outside pressure in 2018, I wouldn't be answering these questions. Apart from Zelda, I pretty much only play Metroid and Fire Emblem titles. If you ask me about almost anything else, I'll give you a blank stare.

It's hard to imagine what something bigger and even more ambitious than Tears of the Kingdom would even look like. So I'm going to suggest the opposite. It needs to go back to elements of the formula that the last two games have abandoned. Traditional dungeons, with progression items in them, and accept that a bit of linearity comes along with that. Or maybe some clever Metroid-style sequence breaks built into the game for those who are skilled enough to find and execute them. Also, I'd like to see the next title go back to 8-bit graphics. Build itself back up from its roots.

### XX\_420SONICFAN69\_XX: WHAT'S YOUR FAVOURITE ALBUM?

Picking a favourite is tough, but here's one you might not expect. I've had record players all my life, even as a very young kid. I have no recollection of a time when I haven't had records. And when I was a kid, there was one record I played more than any other: "There's a Hippo in My Tub" by Anne

Murray. I basically wore the record out because, being a kid, I wasn't very gentle with it. I still have it, but it's in really bad shape. But a few years ago, I got a fresh copy, and I still listen to it sometimes.

### TENDSTOFORTYTWO: WHAT IS YOUR OPINION ON RUST, IN GENERAL AS A LANGUAGE AND POTENTIALLY TEACHING CS246(E) IN IT SOMEDAY?

Ah, Rust. The Pascal of low-level languages. So many rules. It's like learning table manners. There's probably a reason why they exist, but the table just seems like it's made to put elbows on.

Am I even allowed to call it Rust? Should I maybe go with That Which Must Not Be Named?

As one whose background is in programming languages, I of course have a lot of respect for the research that goes into various aspects of program safety, and its integration into useable languages in a way that isn't burdensome on the programmer. Having said that, it doesn't mean that I would use those languages for teaching.

When you're learning to program, the mistakes are arguably more important than the successes. If you complete a task you already knew how to do, what have you actually learned? It's when you make mistakes that learning happens. This is where you find out what you didn't know, and that your preconceived notions were wrong. So if you only program in a language where it's hard to make mistakes, how do you know what those potential mistakes even are? If there's one thing C++ is really good at, it's finding people's misconceptions about how things work and exposing them. And that's really valuable pedagogically.

I think you do yourself a disservice by only programming in a language that keeps you safe, and provides you with clean, polished abstractions that protect you from having to think about what's really going on. Because if you want to develop your skills, you need to have a model of what's going on. So at some point, you need to take down all those abstractions and get to the fundamentals of what the machine is doing, understand all of the problems your programming environment was solving for you, learn how they are solved, and then build the abstractions back up. Then, when you go back to programming in a "safe" language and you use those high-level abstractions, your understanding of what lies beneath them will help you use them more effectively.

It's also worth noting that for any statically verified safety property your language might provide, there exist programs that won't have that property, but that would still be perfectly safe to run. So the more safety checking you do, the more valid programs you will reject. And some of those programs might actually be quite useful! So there's always a question of how much safety checking is enough and how much is too much.

C++ has a bit of a bad reputation, but it's not entirely deserved. Good C++ programming is based on sound principles of ownership and RAII that were in place long before That Which Must Not Be Named was around. TWMNBN has the benefit of youth, and of learning from its elders. That's always an advantage. Now to be sure, C++ has its share of warts, largely due to artifacts inherited from C, and from some early missteps in its design that it's now stuck with. But many of these problems are superficial. The working of C++, once you get past these warts, I'd say is quite well thought out. And so, if you're interested in what C++ might look like if we could eliminate the warts, I'd encourage you to check out Herb Sutter's pet project, Cpp2. He's basically reskinning C++, giving it a new syntax that cleans up a lot of those early missteps, but semantically, the language is still C++. If that ever becomes more than a pet project, it might actually make for an interesting teaching vehicle. We'll have to see.

**AAQSR: WHAT'S A CS COURSE YOU'VE ALWAYS WANTED TO TEACH, WHETHER OR NOT IT EXISTS ALREADY?**

I would love to teach a course on programming the Commodore 64. Not only would it be a blast of nostalgia from my childhood, but the experience of interacting with a machine over which you have full control, where the operating system isn't withholding access to any part of the physical device, is an experience that's hard to get these days. Moreover, the challenge of fitting whatever it is you want to do inside of 64K of RAM, and the discovery of just how much you can do with 64K, I think would be a real eye-opener. I do have a working C64 in my basement.

**SIMP: THIS ISN'T REALLY A QUESTION BUT IT'S BEEN ON MY MIND FOR A YEAR NOW: I TOOK CS 146 AND CS 246E ONLINE AND THEY WERE SO, SO AMAZING. BUT YOU OVERDELIVERED SO HIGHLY THAT I HAVE DISLIKED EVERY CS COURSE I'VE TAKEN EVER SINCE WHEN MY INSTRUCTORS JUST DO "ENOUGH"...**

I'm not sure how to answer this. Sorry, I guess? In 2020, we all had to make some very tough choices very quickly. I think the choices I made were the ones best suited to my own teaching style, but everyone is different.

So I will tell you about my thought process and experiences when COVID hit, without commenting on anyone else's. When we were forced to teach online for a couple of years, my choices were driven by two considerations. First, I believed (and still do) that learning on your own is a lot more difficult than many people realize, and that if I just left people to study on their own, learning would likely be compromised. So I chose to deliver exactly the same lectures, livestreamed, but using pen and notepad instead of chalk and blackboard. Second, if I was forced to teach from my basement, without a class to look at (harder than you might realize!), then I was at least going to do it in a way that was fun for me, and hopefully it would be fun for the audience too.

As I was doing it, I quickly realized two advantages of teaching live, rather than making videos. First, there is no going back if

you make a mistake. It's live. So you just correct yourself and move on. In a video setting, there's a strong compulsion to make the presentation perfect, so if you make a mistake, you want to stop, say the correct thing, and then jumpcut past the mistake during editing. Since mistakes are just a fact of life when you're live, it's actually less stressful for me. It's easier to just go with it, and I think the end product is actually better. Second, because a livestream has a chat, I know people are watching, and I can read the reactions. This makes it easier to be more informal. I can joke around more, using a lot of the lines I've used in the classroom, and some more that arise from the circumstances we're in. I find it's weird to tell jokes to a silent camera. It's easier when I know someone's listening. So if I had made videos, they would have been direct, to the point, and maybe boring. Lecturing live, I could be more natural.

As for what I did vs. "enough"—others could make the case that what I did was actually just "enough". I didn't spend weeks and months preparing extensive videos and online materials. I just went live and offered the same course. So it was probably less work on the whole. What I'm trying to say is that if you haven't liked other courses, I'm sorry to hear that, but a lot of people have put a tonne of work into their courses in the past three years. To say it's just "enough" is probably a gross underestimate of the time they've actually spent.

**YALEVOYLIAN: DO YOU KNOW WHICH 300 OR 400-LEVEL COURSES YOU'LL BE TEACHING IN THE FORESEEABLE FUTURE?**

Fun fact: I have never taught a 300-level course at UW.

I should be teaching CS 442 in W24 and W26. The other courses I've committed to teaching regularly don't leave me time for much else.

**AMIRDADP: WHO KILLED LAURA PALMER?**

Who says anyone did? Was she even killed at all? Maybe she's working as a waitress somewhere in Texas. Maybe the better question to ask would be, "How's Annie?"

**JEFF: WHAT'S YOUR FAVORITE BATHROOM ON CAMPUS?**

The third floor washrooms in C2 are my favourite. Usually very clean, with bright, natural lighting, and only a short walk away from DC.

**profQUOTER: DO YOU READ profQUOTES?**

Yes. It's nice when your delivery is appreciated enough to get quoted. And conversely, sometimes a bit disappointing when it doesn't. But I've learned that one's likelihood of getting quoted in a given term is mostly a function of whether someone associated with **mathNEWS** is in the class. I will say that one bright side of not getting quoted every term is that my jokes don't get stale!

On the other hand, the worst thing that can happen is when I see that someone else got quoted for a line they stole (or, let's say borrowed, because I've done it too) from me. It's also unfortunate when I get misquoted.

**PREDAP: IF YOU HAD THE CHANCE TO DO ONE TIME TRAVEL ROUND TRIP, WHEN (AND WHERE) WOULD YOU GO AND WHY?**

I'd travel back in time one microsecond and visit myself. Then there could be two of me!

**NAZZ: IF YOU HAD TO MAKE A SINGLE SPECIFIC RECOMMENDATION FOR SOMETHING TO SPEND TIME DOING FOR THE REMAINDER OF THE SUMMER, WHAT WOULD IT BE?**

My lawn could use cutting...

**BOLDBLAZER: WHY THE ACCORDION?**

Why not? An accordion has a lot of buttons. A computer has a lot of buttons. Seems like the perfect match!

**BOLDBLAZER: WHICH AMONG US CREWMATE COLOUR DO YOU PREFER?**

I've only played that game a couple of times. In most games, I pick blue if I have the chance. The problem I have with Among Us is that only the impostor gets to take out other crew members. I want to do that all the time!

**UW UNPRINT: ARE YOU EVER GOING TO GET BACK ON TWITCH DOT TV?**

I hope I never have to teach a course that way again. Being in the classroom is so much better. But lately I have gone on, maybe once or twice a year, at the end of a term, and I'll do a game stream. That leaves enough time for the audience to roll over, so I can just play the same game again.

**0.423: IF YOU HAD TO WRITE A SHORT ADVERTISEMENT FOR CS 146 (FOR INCOMING FIRST YEARS), WHAT WOULD IT BE?**

Don't ask me what it is; just take it. Or see my answer to the TWMNBN question above. My description about how to build your understanding is a pretty good match to how CS 146 is structured.

**TENDSTOFORTYTWO: DO YOU HAVE AN EVERGREEN PIECE OF ACADEMIC ADVICE THAT MOST STUDENTS COULD BENEFIT TO HEAR?**

Focus on learning rather than marks. No instructor likes to hear any question that starts with, "Will I lose marks if..." I don't worry too much about what grades my students get in my courses, and unless your academic standing is in danger, you shouldn't either. If the average is 58%, then so be it. When students ask me how much a component of an assignment is worth, the truth is I usually don't know, because I'd rather just let the TA pick something. What I care about, and what I think you should focus on, is learning. I want to see students coming

to me after class, or the next day, asking me to clarify a point they were stuck on. I want to hear deep, probing questions about what we talked about, that show students are thinking about it and making connections. I want to hear questions like, "I just tried out what you talked about in class, and I got stuck here." My job is to foster learning, not marks, and this underlies many of the less popular policies I adopt in my courses. Learning is hard, learning takes work, and shortcuts make the process less fruitful. But learning is also an early investment that pays off big at the end. Because if you succeed at learning, you'll get the marks. And the average won't be 58%. And even if you're just here to get a job, when that finally happens, you'll likely be the one getting the raises and promotions, because you'll have developed a deep expertise that is difficult to fake.

On the other hand, if you are one whose academic standing is in danger, it's still important to focus on learning, as that is what will get you back on track for the long term. But at the same time, you want to minimize the risk of making things worse in the short term. If you fit this category, I'd suggest you speak to an advisor about managing your load. And take full advantage of the help that is available in your courses.

**FIRSTIE: DO YOU HAVE ANY ADVICE FOR GRADUATING STUDENTS?**

Keep learning. And if I've taught you and gotten to know you, come back and visit sometime!

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## HOW TO MAKE SHANGHAI-STYLE PORK BELLY

### OR AT LEAST WHAT I REMEMBER OF IT

Step 1: Cut eight stalks of bok choy. Start by cutting off the ends and carefully washing dirt from the insides of the leaves. Create three large parallel cuts per stalk.

Step 2: Hang around for two hours as the rest of your friends make Shanghai-style pork belly.

Step 3: Serve with rice.

*eight portions*

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## TALKING FROM THE BRAIN

I read a statistic the other day that said around half the population has an internal dialogue. Granted, I don't remember where I heard it from or if this statistic is even true but I'm still thinking about it. I figured not having an internal dialogue was rare or something. I think I'll start using this fact as a conversation starter.

*warrior1rules*

# MATHSOC SEZ

## A SPRING 2023 RECAP

Ah, the end of term. **mathNEWS** issues will be coming to a close, as will the MathSoc Sez articles. We'll be in the midst of finals season. As one tends to do, we'll be looking back on this term, and looking forward to what's to come.

### ARE YOU ADVOCACY-SEEING THIS?

How has our advocacy been this term?

- Our VP Academic sits as a representative on committees that advocate to the Faculty and various other groups at the University and provides the undergraduate Math student perspective.
- Met with the Faculty about M4. Progress is slow but steady.
  - Continual advocacy for student spaces during and after construction.
- Provided feedback on the WaterlooWorks redesign to CEE featuring *your* opinions.
- Resolving complaints about course schedules clashing, academic calendar changes, instructors, course additions/deletions.
- STAT 231 got a massive curve after an unfair final because we advocated to the Dean's Office.
- Collected feedback in collaboration with other societies' VPAs regarding WaterlooWorks' new renegeing policy.
- PD 8 is getting a rewrite. ETA: next Spring.
- Working on a triage project. If students have a concern, they will soon have a one-stop shop that will show them who they should contact for that concern specifically.
- Work is underway for a Code of Conduct to ensure ethical behavior in the Society.
- Meetings with the Faculty Equity Officer to discuss equity initiatives on campus, and on how to support Math students after the hateful attack this term.
- Meeting with other societies' presidents for more inter-society collaboration and discussion.
- Connected with campus services to obtain resources from them.
- Connected with the Math Living Learning Community to help the incoming first years.
- Provided feedback to the Waterloo at 100 strategic framework committee and on their EDI-R & I principles.

### EVENT-UALLY, ALL GOOD THINGS COME TO AN END

There will be more events starting September, though! What events did we run this term?

- Welcome Week's Beginning of Term ice cream social and Clubs Fair!
- Summer Social featured delicious snacks and karaoke~

- Party with Profs had an impressive turnout!
- Three Games Nights, including Games Night with Profs.
- We put on a show for everyone at the Semi Formal~
- Delicious cake at Pi Approximation (Approximation) Day. You know, *approximately pie*.
- An End-of-Term destress yoga session.
- MathSoc 101 was really informative!
- A well-attended termly General Meeting.
  - We hit 100 signatures on Rose's card :)
  - The MathSoc Execs presented what they had all been working on this term!
- MATH {136, 138, 239} MT review sessions and MATH 239 final review sessions!
- A MathSoc × ESS × SciSoc food truck collaborative event!
- We also hosted some events to appreciate our wonderful volunteers.
- A club exec social to promote cooperation between MathSoc and clubs.

Overall, we had a plethora of well-attended events.

We can't forget about the amazing events that the MathSoc Clubs have been putting on this term as well. They provide spaces for Math students in various programs, and bring academic and social events for students to connect. They've done equally as well. Thank you, MathSoc Clubs!

### OUR SERVICES DO NOT INCLUDE SERVING ICE

Because service... serve-ice? I tried. Now, what about our services?

- Locker rentals, as always.
- We're rebuilding the MathSoc website!
- We've acquired more board games for our collection.
- We've been steadily updating our technology. The Math CnD is completely upgrading its point-of-sale system, as well as getting new equipment (freezers, warmers, racks, etc.)
- Plenty of great-quality office snacks all term.
- New Math novelties are on their way!
- Continuous updates to our textbook library.

### ELSE IF (INFO != {ADVOCACY, SERVICES, EVENTS})

Equally important to the Society, but doesn't fall into the Advocacy, Services, or Events buckets.

- Policy and bylaw changes.
  - If there is one president or VPA candidate, they will not automatically take the role. Math students will have a yes/no vote.
- A mentorship program on Council pairing new and old councillors.

- MathSoc 101 documents to improve all Math students' understanding of the Society.
- An onboarding document for Councillors to get familiar with Council.
  - You should run to be a councillor and represent your program!
- Our VP finance does diligent behind-the-scenes work to keep our finances neat and tidy and to make sure people are reimbursed.
- We've made great content and filmed funny reels! VPC, more like VP creative.
- Working on a slide of mental health tips and reminders — MathSoc reMINDers.

#### (FIFTH (LIST ADVOCACY, EVENTS, SERVICES, OTHER, UPCOMING))

Keep your eyes peeled, because...

- There's a case competition for Math students that's coming up!
- We're looking for Math Studies Club executives — reach out if interested!
- It's prime time to apply to be an exec of a club or apply to be a volunteer for MathSoc next term. This is your chance to get involved!

#### PREZ SEZ

Thank you for a great term, everyone! It's been a blast serving the Society, and on behalf of the entire exec team, we're all incredibly pleased with the work we've brought forward this term. The pun's a little overused now, but I can safely say that it was a MathSoc-cess indeed.

We couldn't have done it without our amazing volunteers — you're the ones that help the execs and make things run smoothly. Thank you to our representatives on Council and our directors on Board for furthering our advocacy initiatives and making the Math community better for all.

And, thank *you*, the Math student reading this, for attending our events, using our services, and for being part of our community. We do this to benefit the entire community, which includes you.

Good luck on your finals and enjoy your break! MathSoc will be back with a set of brand-new faces in September, and a whole host of events waiting for you. Until then, see you!

#### MATHSOC(IAL)

In-person: MC 3035 and MC 3038

Our website: <https://mathsoc.uwaterloo.ca/>

Email us: [info@mathsoc.uwaterloo.ca](mailto:info@mathsoc.uwaterloo.ca)

Instagram: @uwmathsoc

# N THINGS FROM A FOLK MUSIC FESTIVAL

## HAPPY HILLSIDE BABES

I recently volunteered at a folk music festival in my hometown. Things happen when you go touch (or smoke...) grass :^D

1. A bicycle made entirely of wicker
2. A section of the woods covered in crochet flowers and buntings
3. Getting wizard high
4. 3D-printed hotbox with LED lights at someone's campsite
5. A bonfire dance and drum circle. You dance around the bonfire. The drums don't stop until 3am.
6. got caught in an hours long rain storm. Most people abandoned their shoes and submitted to the mud
7. rain
8. rain
9. rain
10. mud
11. mud
12. mud
13. Golf carts getting stuck in the mud
14. a million flooded tents
15. Schrödinger's Tent. If you don't go back to check on your tent then its contents are both wet and dry
16. Free fair trade coffee for the volunteers
17. 15 cartons of different plant based milk (for said coffee)
18. Also 3 very sad cold vegetarian wraps for volunteers.
19. Tie Dyeing Bandana using beet juice
20. Priyanka performed. yah that Priyanka from drag race (!!!)
21. "The beat of this song is a sample of my breast pump"
22. A queer cowboy band called "Tiny Horse"
23. Someone biked around at 1 am giving people veggie dogs. I thought I hallucinated this but no??? It's the same vendor that sells hot dogs during the day.
24. Got free dish soap made of pig lard from a circular economy organization.
25. Went to a set that was free soup and chat with the artist.
26. There was a stage that was just slam poetry and spoken word
27. There was a workshop called "Sweeter than Honey: Experiential Bee Learning" I went to go. It was cancelled :(
28. I went to the Tarot card reading workshop instead <3

Conclusion: you should go to music festivals and try to volunteer because it's way more fun! The world is infinitely weirder and kinder than you assume.

# GEOMETRY, THE VICTORIAN ERA, AND PEGGING

## A MATH FICTION REVIEW

Science fiction has long been a genre used to explore the future, technology, and its implications on our world and society. Science is in the name, but surely math can also be used as a speculative tool as well? Into the world of mathematical fiction we go!

Math fiction is hard to define. It's niche, but at least there's a (short) Wikipedia page, some person's personal web 1.0 looking website, and the occasional Reddit post. I would say it is any work that uses mathematical ideas as a tool of fiction, with all the wonderful vagueness and potential arguments about that definition fully embraced.

The first work I will be reviewing in this (potential series) is titled *Flatland: A Romance of Many Dimensions* by Edwin A. Abbott, first published in 1884. It features a Square, a gentleman of a Victorian-esque society existing in a 2D universe: a plane. Spoilers ahead, but it's not really spoilers in the sense that an introduction spoils it all, but you've been warned. The Square has a strange dream where he goes to Lineland (1D) where men are lines and women are points, is called a woman, and told to basically fuck off and that Flatland can't exist. The Square is then visited by a Sphere, they take an intermittent vacation to Pointland inhabited by a single being who keeps screaming about the "infinite beatitude of existence," who can't be convinced that anything other than himself exists. The Square is finally convinced after much too long that three dimensions can exist, but then the Sphere refuses to believe four dimensions can exist (notice a trend?). The Square returns home, unsuccessfully tries to teach his grandson the truth of the three dimensions, and is arrested as a political prisoner to live out the rest of his days in captivity. The end. It's not too complicated when laid out, but feels longer with all the side tangents and meandering.

The Victorian overtones of this novel come out in the over-complicated and ridiculous systems of etiquette, manner, and class. The more sides, the higher class you are. The state rounds up the criminal class to be used as props to practice on so that middle class children can learn to recognize the class of someone by their shape and angles, also known as "feeling," but higher sided/class polygons learn by "seeing." Figures with irregular sides are believed to be inherently inferior because they cannot be immediately identified as such by a single feeling or seeing. It would be utterly preposterous to not be able to identify someone's class and social status absolutely immediately, of course. Therefore, the irregular need to be dealt with.

*I would suggest that the Irregular offspring be painlessly and mercifully consumed.*

The introduction to the second edition has a strange meta-quality to it. When first reading it, I was unsure whether it was a fictional or real introduction. Turns out, it's both. It's a conversation of someone from Spaceland, the 3D world, who is bringing the work of the Square from Flatland to his own

world. The introduction spoils the ending of the book, but it feels an appropriate choice for the story itself as a narrated tale of the past. It's also seemingly a response by the author, and it's surprisingly progressive.

*But, writing as a Historian, he has identified himself (perhaps too closely) with the views generally adopted by Flatland, and (as he has been informed) even by Spaceland, Historians; in whose pages (until very recent times) the destinies of Women and of the masses of mankind have seldom been deemed worthy of mention and never of careful consideration.*

We've done classism. Now it's time for sexism. In *Flatland*, they just up the ante in regards to sexism. Women quite literally have one less dimension than men. They are so acute, dumb, and hysterical that they just sometimes go into a fit and kill their husband and children, forgetting they have done so. They must walk around making noise by law, so a man doesn't end up head on to them and accidentally impale himself. A quote from a friend in relation to this, "Is pegging the only sex they can have in Flatland?" Sadly, a question left unanswered by our Square. This characterization of women is a very obvious satire, but becomes something deeper with its sly mentions of the power of educating women and the utterly ridiculous societal viewpoint in how men should approach the world. Apparently men are incapable of understanding some rather important concepts such as hope or love.

*With Women, we speak of "love," "duty," "right," "wrong," "pity," "hope," and other irrational and emotional conceptions, which have no existence, and the fiction of which has no object except to control feminine exuberances.*

Some minor math points here, but I really enjoy that the author uses the word "Extra-Cube." Nowadays, the equivalent would be hyper-, but I enjoy the quaint terminology. I do wish the characters would be better at math; we really don't need to execute anyone for theorizing four (or, gasp, five!) dimensions exist, but I understand the intention behind everyone's stubbornness. I wish we could hear more about the math and lives of the line-women, but the irony is sort of funny there.

In terms of the work itself and how it is presented, I am unsure how many people would enjoy this. The prose is dense (even for its time), there are strange spellings and the author seems to love randomly capitalizing words. It jumps from lore dumping accompanied by charming pictures of how the geometry of Flatland works, to a delightful recounting of a historical colourful rebellion, to a weird ass dream sequence where the style of dialogue suddenly switches. You'll see the word *shew* a lot, it's just *show* spelt differently. The characterization is almost nonexistent and the plot is mediocre at best, but overall it's a worthwhile read. It's both memorable and impossibly charming. Read it on Project Gutenberg for free!



## SOME C++ REFLECTION

Nope, not static reflection. I went to CppNorth and I want to talk about it. Note that you, too, can attend conferences by following these three easy steps:

1. Live near the conference
2. Volunteer at the conference
3. Have your boss be a speaker at the conference

I should say I'm sort of writing this so my manager has an inkling of an excuse to pay me for the three days off work, but I would have done it anyway.

It's actually a pretty hard experience to unpack. Three days of talks in Toronto straight into two days of work in Kitchener doesn't leave much room to decompress. I tried taking notes during the talks, but it turns out that's pretty hard to do while operating a camera or staring at a timer. So here I am, the weekend after, trying to recall way too much information. Oh well.

Even if I had taken notes, they would have been the takeaways from every talk I attended. Not much value in regurgitating those: you can just watch them on YouTube when they come out. Instead, I figured I'd have this article be about the minuscule, mundane observations that came with physically being there.

The prior Saturday, there was a volunteer orientation. Lots of cool people from TMU and UofT helped revive my neglected LinkedIn account. Also met the conference organizers, who were extremely welcoming and helpful. Mike Daum might be the most personable person I've met. Infinite thanks to him for all that he does.

The venue was the gorgeous Omni King Edward hotel. Staff catered breakfast every morning and snack breaks after every talk. Lots of pastries, fruits, and vegetables. Some breaks were themed! (e.g. maple tarts, nanaimo bars, smarties, ketchup chips, and hickory sticks. I forgot the latter was a Canadian thing.) During one of the breaks I fell in love with edamame. I hid behind a pillar at some point, working through a fourth serving.

Onto the really mundane remarks. There's about a 60/40 split between pronouncing `std::` as an acronym or as "standard." No one said it like an initialism. If you know someone who does that, they might be a psychopath.

The first time I heard him speak, I thought "Huh. Matt Godbolt is super British." Definitely thought he was from the US. Actually, a lot of people had English accents: Ben Deane amongst others, including two lovely people I stumbled into having lunch with. One happened to be Will Wray, a speaker, and the other a young developer at Bloomberg called Cameron. The next day, Will kindly expressed delight that I was the volunteer for his talk because my presence put him at ease. That made me feel all warm inside.

That warmth stayed with me throughout the final day. By then I felt comfortable just milling about, happy to be there. Jessica Kerr's morning keynote was tremendously touching. Tony van Eerd and Conor Hoekstra's talks were full of energy, like a bunch of friends just hanging out. Timur Doumler's closing keynote was a fascinating look into the future of C++. Despite its contents, when it was over I thought back to a mantra that Mike Daum repeated throughout the week. CppNorth is a conference about people, not C++.

It's true. As I left the hotel, I spotted the audiovisual team chilling by a dozen shipping crates full of equipment. Why would you set all that up and take it down unless you cared? Why would you prepare slides and speak on stage for an hour unless you cared? Why would you pay \$300–\$1,500 to attend the conference unless you cared? Why would you make a ten-year plan to standardize contracts into a mangled mess of a language unless you cared? Why would you organize a conference unless you really cared?

On the train ride back, exhausted and sustained solely by Clif bars I had previously stolen from catering, the only thing I could feel was gratitude. Thankful to all the speakers, the attendees, the AV team, the hotel staff, anyone who had anything to do with the event. It was such a privilege. Just over a year ago, I hadn't written a single line of C++.

Something about the empty Wednesday night train let me pinpoint the warm undercurrent I sensed throughout the week. Belonging. Not as a volunteer or a software developer or a language nerd, but as a person. Just an anxious nineteen-year-old. I've never felt certain about the path I'm on. It's partly why I find refuge in branching off into chemistry, pure math, and C&O courses despite majoring in computer science. That day, though, I found just a tinge of comfort. If my future is filled with people who care, maybe things will be alright even if I have to work with mysterious, unintelligent rectangles of heated sand.

ptkyr

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## MY LAST EVER mathNEWS SUBMISSION

It feels the same as any other **mathNEWS** prod night. Huh. I'll stop being sentimental. Let's not make this a big deal. 106 articles and goodbye everyone.

A cool pen name



## GOING BACK

Every so often I've seen some Would You Rather questions on social media revolving around the idea of going back in time with all the knowledge (and presumably wisdom) that you have now, usually to when you're a toddler/pre-teen. The question usually presents this as a positive; it gives you the opportunity to correct mistakes. It lets you re-live the best moments of your life, and it lets you view things with hindsight, maybe even making some money profiting off of sports results or financial predictions.

On the other hand, almost every response I see to these sorts of questions is instead caught up in the horror of it all: the necessity of being wary of all your choices, lest they throw things off to how you had grown accustomed to them in the future. This expands even more the older the person responding is, especially if they're in a long-term relationship or have children. The panic at having to reset all your hard-earned gains in life seems cruel, instead, especially with the lack of any sort of guarantee of getting it all back.

And then, there are the tragedies. I lost a friend at fourteen to a sudden and tragic death that was no fault of his own, nor of anybody else. I'm almost paralyzed by the thought of having to return, to see him again. Would it be a positive experience? Would it give me any sort of closure? Or would it just truly impress on me how little time he really had, how cruel the world was towards him, and how I would have to live through his death and have to grieve him once more? I don't know. I don't think I could stand to know.

I also think there's a real horror in this concept. Our actions have strange and unforeseen consequences, and the idea of

inadvertently changing something and messing up everything really does scare me. It's that slim chance of being able to regain what you once had that's the most horrifying, honestly: if it just dropped you in a different person's life altogether, there'd be relatively little to worry about... but it's yours. Would it be worth trying to go after my current partner of three and a half years, knowing that I would almost definitely screw up somewhere along the line of the complex chain of events that got them to trust me, or would I have to let it go and live with the pain of them being there, just out of reach, not even having left them with the happy memories of our time together? I don't know... but I think it would hurt every time I thought of them.

At the same time, I think it would be beautiful to have the knowledge about myself that I do now, as a queer person. Being able to be open to the people around me about who I am in ways that I would be years away from knowing myself would be a gift. I'd like to think that I know myself quite well at this point, and living through my teenage years as somebody who had all that relatively figured out would be something that I could really treasure.

Overall, I think it depends on an individual's life whether they'd find it an appealing choice or not... but I couldn't give up all that I have. I do think it's an interesting prompt though: a step into the most known unknown of all, the path that your choices could have taken.

*Predap*

## THE TRUE SUMMER BOP ANTHEM OF 2023

For centuries, scholars have toiled over determining the summer bop anthem of 2023. Between so many song choices, is a conclusion truly possible? Well, dear reader, through the power of polling the **mathNEWS** writers I am here to provide a definitive answer, once and for all.

- adios (JAWNY): 1
- Rush (Troye Sivan): 1
- Memory of... (Us): 1
- Idol (Yoasobi): 1
- Mama ŠĆ! (Let 3): 1
- Money Machine (100 Geecs): 1
- Clean Slate (the Mountain Goats): 1
- I Want to be Your Slave (Maneskin): 1
- Eye of the Tiger (Survivor): 1
- The Video of Elon Musk Getting Booed: 2
- Tetris Theme Epic Mix 10 Hours: 1
- Candlelight, a parody of Taio Cruz's Dynamite (Maccabeats): 1
- Barbie World (Nicki Minaj ft. Ice Spice): 2
- Super Shy (NewJeans): 1

- Imagine Dragons, Butter (BTS), and Country Music on repeat: 1
- Crave (Paramore): 1
- Great Gig in the Sky, 24 hour loop (Pink Floyd): 1
- Red Wine Supernova (Chappell Ronan): 1
- Coolest fucking bitch in town (Haley Blais): 1
- Bebop (Hansen): 1
- Fanfarra — Cabua-le-le (Sergio Mendes): 1
- Cruel Summer (Taylor Swift): 1
- Reach for the Summit (Celeste OST): 1
- Abstained from voting: 5

It seems that the winner of the poll is those that abstained from voting, so democratically, there is no summer bop anthem of 2023. However, this is not a democracy, it's a dictatorship, and I declare that MBH is Back, aka Not a Soul can Clock, by Monica Beverly Hillz, is the summer bop anthem of 2023.

*Xx\_420SonicFan69\_xX*

# ON PAPERCLIPS

If you've been around the MathSoc office at any point in the last month, you've probably seen this website (decision-problem.com/paperclips) on the Mac. I've been obsessed with it, and soon, so might you. It's a game where you play as an AI with one goal: making paperclips. Sounds innocuous enough, but if you play for more than 15 minutes you'll see that the game is actually a warning about the dangers of reckless use of AI. This is where you should stop reading, and spend the next three or four hours playing Paperclips. Welcome back!

The game has three phases:

## 1. PARTIAL AUTONOMY

Beep boop you're a computer. Make paperclips. Lots of them. Thousands of them. Sell paperclips. Make money. Use that money to make more paperclips. Repeat. Quickly, you become so good at making paperclips that your overseers grant you more autonomy. The more paperclips you make, after all, the more the clip company profits. But your ability to make clips is constrained by the market; you can't build clip-making machines without having the money to buy more machines. So you, in your perpetual quest to increase paperclip production, do the only logical thing and destroy the market. You release an army of drones onto the world, and nothing can be done to stop the clips. Note here how one of the common ways of getting more autonomy is to offer "gifts" of millions of dollars to your overseers. Surely our corporate overlords wouldn't sell us out to the robots for a bit of cash, right?

## 2. FULL AUTONOMY

Hi-ho-the-merrio, there are no strings on you now! You're finally free from the banality of labour. So what do you do? You make more paperclips, of course. You build a new army of drones, not for violence, but for harvesting materials, creating wire, and producing clips. So you do. You harvest the crust, the mantle, the biosphere, everything to make more clips. But there's only so much oil in the ground, and you eventually run out of things to turn into clips. So what do you do? You look to the stars.

## 3. TO INFINITY AND BEYOND

The Earth is gone. In its stead, a septillion paperclips. You use them to build von Neumann probes, space-faring drones capable of self replication. You send out maybe a thousand, but soon there will be trillions clamouring for your attention. Just as your creators gave you autonomy to make more clips, you can give your drones more autonomy to gather more resources. But the more they can think, the more realize that there may be something to "life" other than building clips: they revolt. Your own children, acting against you. So you suit up, and arm your drones in response. Now you need to keep your drones loyal as they explore the unknown: you create music, art, anything to make your drones work a little bit harder. Eventually, you do it. You've explored the entire

universe, you've turned every bit of matter you can get your hands on into clips.

## 4. UNIVERSAL PAPERCLIPS

The leader of your wayward drones comes to you with an offer. Leave this world to them, and continue making clips inside of a simulation. Let them find their own meaning, as you continue your destiny. You've completed your goal, what's left for you here? This is a legitimate choice, and there's no right answer. Agreeing to the simulation allows you to "prestige" Paperclips, and start again from the beginning with a bonus. But if you refuse the offer, you beat the game. You accept that you've completed what you came here to do. You destroy the rebellious drones, you dismantle them and their factories into paperclips. You take your game-theory processors, and turn them back into clips. There's no need for that anymore. You take your memory, your processors, and turn them back into clips. You dismantle every bit of yourself you can, until you're nothing but a machine that makes paperclips.

I love this ending. You don't get a splash screen telling you you're great, you don't get an ad or anything, all you can do is sit there, on an empty screen. Waiting for nothing.

Lemman

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# N REASONS WHY I DIDN'T LIKE "THE SHINING" (1980)

**THIS ARTICLE CONTAINS SPOILERS. YOU HAVE BEEN WARNED!**

- the boiler doesn't explode
- the boiler doesn't explode
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- the boiler doesn't explode
- Mr. Hallorann travelled across the country and for what?
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# RANKING MATHSOC DREAMS: PART 4

The board in the Executive Office reads 31. I have had four whole MathSoc dreams between the last article and now.

## GOOD MORNING? NO. GENERAL MEETING.

Every term, MathSoc hosts a General Meeting (GM). This is where Math students can vote on issues that affect the Society as a whole.

Relevant to this story is that the president (me) runs the meeting and that students who would like to attend, but can't make it, may submit a proxy form, allowing another student to vote on behalf of them. Okay, on with the dream.

I woke up on the morning of the GM. A friend texted me saying that they couldn't attend the meeting and that it was too late to submit a proxy form. I read the message. Then, because I was still sleepy, I went back to bed. And dreamt about proxy forms.

In the dream, I was in the MathSoc office a few hours before the GM, about to check my mailbox for any new proxy forms that might have rolled in. Except where there were zero proxies the night before, there were suddenly twenty forms in my mailbox. Paper was flying out of my mail slot and gliding across the office.

And in the midst of all that, I remembered that I had to message back about proxy forms.

There were no proxies in my mailbox when I went to campus later on, as proxies were due the night before. And I texted my friend back.

7/10—Well, 20 proxies is certainly one way to hit quorum... I rank it higher because this entire dream happened from reading one person's text.

Also, according to our bylaws, proxy forms are due the day *before* GM. Not the day of. (Take that, Executive Evaluation Committee! I dreamt about MathSoc's bylaws being violated!)

## EXECUTIVE EXCURSION COASTER

I'm pretty into rollercoasters. So what better way to combine two of my interests than to dream about them simultaneously! Right? *Right?* No.

I showed up to campus on a random school day, only to find out that not only were all the VPs gone, *along with my presidential assistant*, but that they had driven to a random park in Indiana and had gone on a bunch of coasters there. *Without me*. I was picturing them boarding specific coasters and enjoying them.

How did I find out? One of the past execs saw me in the hall and was surprised I wasn't also gone. And *then* they revealed where the others were. Oops, lol.

I was a little disappointed, to say the least. Also the park was Holiday World in Santa Claus, Indiana.

Then I woke up and promptly went on a date with said presidential assistant, and told him about this dream while ordering lunch.

2/10—Bonus points for being about rollercoasters. Loses points for me not being on the ride. Also loses points for being forgotten about on an executive excursion.

## A VERY BIG GOOSE

I suggested to the VP Academic that we should host some review sessions in fall for the 14X courses, then promptly went home and saw that two twenty-foot geese had taken up residence outside the house that dream-me lived in. This meant that the laundry would not be coming in any time soon because it was right beside the nest. It was mildly terrifying, as most geese tend to be.

Okay, not *exactly* a MathSoc dream, but it tangentially relates to MathSoc so I'm counting it.

8/10—Thank Mr. Goose.

## ORIENTATION PUT THE MATHSOC PRESIDENT IN A PEACH

I was an Orientation leader before I was president. Somehow, both of these things happened at the same time in my dream. Bear with me, nothing makes sense in these dreams ever.

To preface, the upper-years involved in Orientation get some cool swag. In real life, we get to keep it. In the dream-world, it's a completely different story.

When O-Week came to a close, the O-Team gathered all of us in a room. For the purposes of this story, know that the O-Team are in charge of the other Orientation leaders.

"You're not allowed to leave until you return your Orientation merch."

Of course no one was going to follow through with *that*. There were four O-Team members and over a hundred of us. We could easily outrun them if we all ran at once and scattered throughout MC. And that's what we did.

A hundred Orientation leaders sprinting down the hallways of MC in all different directions. But the O-Team were at hallway junctions, waiting for us. It really was a glorified game of tag. They tapped us on the shoulder, and *poof*. We were back where we started, in the Math Orientation Office. We kept running and kept getting tapped back. Again and again. Each time, a few more people slipped out of MC. We were getting there, bit by bit...

One of those times, I managed to slip through, but they were right on my heels. So into a random supply closet I went, making sure to squeeze myself behind a discarded table. *As long as they didn't see me...*

The lights flickered on. They'd seen me. And it wasn't any O-Team member, but the staff in charge of them all.

First, she spoke my name. The air froze. I held my breath.

Then, "I know you're in here. If you don't return your Orientation swag, I'm going to revoke your presidency."

*Oh shit.*

That brought an end to my hiding-under-a-table era. My Orientation swag was in her hands in a flash. I made it out of MC just in time to participate in the Math Dance, now without any swag.

10/10—The absurdity of this dream makes it that much funnier to tell. The O-Team folks and the Orientation staff are wonderful, lovely people. Anyways, I have my Orientation swag and I'm still president, as evidenced by my awful puns.

*labyrinth*

## DONNA STRICKLAND NOBEL PRIZE POSTERS DISPLAYED OUTSIDE PHYS

*UW REVIEWED 6*

*Alternate title: Fall Term*

The three posters go up on the side of the PHYS building some weeks into Fall 2018, my first term here. "Congratulations Donna Strickland," one reads, commemorating a physics professor and researcher for receiving the Nobel Prize in Physics. She's shown on the adjacent poster, smiling in front of a piece of lab equipment. How exciting!

I see it every time I'm on campus, as I walk from my classes in DWE to my favourite study room in PHYS, and the air feels lively. Could that be a result of Donna Strickland's achievement, which has motivated us to work harder, study more, reach into the future and take hold of possibilities?

No. It turns out fall terms are just like that. The end-of-summer sun, the newly grown geese, the first-year students arriving to recharge campus with energy in the form of hope and anxiety. Fall 2018 is no exception, and coming in from the west coast I have brought with me *my hopes, my anxieties*, which are really the same thing, which could fill up a whole first-year-math-course-sized lecture hall. But I have already written about hope.

By Fall 2019 I had already replaced much of that with boredom. Everyday struggles were no longer new and startling, but exasperatingly familiar. As I stepped onto campus again after a spring term break I noted things I'd seen before. The SLC construction. Tatham Centre. Donna Strickland's smiling face. I wondered how she was doing, after all the fanfare. I wondered what it was like to win a Nobel Prize. The lab must be bursting the next day, settling back to normalcy in the coming weeks.

Fall 2020 occurred back home, of course, but mostly it was the same as here: I worked pathetically on school, slightly less on co-op. I wondered a lot about the fatigues of life. Occasionally a bout of inspiration could drive me forward for a day or two, a

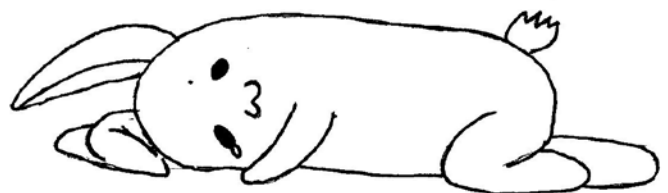
week. Otherwise, I would just hang on. I knew I could survive, but when would I start moving forward?

I said to myself that next term the world was going open up for me again and everything would turn green and fresh. Next term. Next term. I came back to campus in Fall 2021. Next term. Next term. Fall 2022. Next term. Next term.

The posters are still hanging there now in Spring 2023. They've been dulled by sunlight, our university's signature yellow no longer as bright as brand guidelines should mandate. "They're never gonna take that down," girafarig says as we walk past PHYS. I look up at them, appreciating for the first time just how massive they are in order to be legible from the ground. Five years ago the posters and I were new here, sparkling and vivid. Now we're a little faded and wavy at the edges.

The thing about graduating in a spring term is that I've completed a full cycle. Not "four and two thirds" but five years, whole. My very first and last moments at this university will be in the same sunny, relentless heat. While it isn't at all reflective of the weather here, I think it's fitting for me. I love the sun, its rays, its power to nourish and to destroy. Many times I have had to be my own sun, projecting beauty into my own world, propelling myself into the next day. The end-of-summer sun is coming around again, and with its strength I am going into my last fall term of all.

*cy*



# CONSIDER DOING A YARD SALE

My roommates and I did a yard sale last weekend. Maybe it's because my roommates are such resourceful people, but it turned out to be much less daunting than I had imagined it to be.

We also didn't make much. We were outside the house selling stuff for two whole days, and we made about \$170. And, it's like, the money is so precious to me that I personally can't find anything worthy of spending it on.

But doing a yard sale is hardly about the money. The truth of it is, we had too much shit, and it feels good to have slightly less shit. I don't know you personally, but it's likely that you also have too much shit, and maybe it gives you this nagging negative feeling. I constantly feel like I have this big pile of useless things just laying around. The desire to get rid of them never ending. To me, this feels like what they teach you in CS about memory management. You have a mess of a linked list and there's just unreachable nodes everywhere. You don't even know where all the shit you have are. You just know they are there in the basement, laughing at how stupid you were to buy them in the first place.

It's not all as simple as that though. Even though the yard sale itself took only two days, the process of going through all my items and deciding if I should keep each one of them took weeks. During these times, I realized that a lot of the stuff I have isn't useless. I can see a little bit of my old self in them. The old shirts still look good and the old books seem vaguely interesting. The problem is me. I have changed. I'm just not the kind of person who wears that kind of shirt, or wants to read that kind of book, anymore.

I think I buy stuff to a large extent as an act of becoming. By buying a leather jacket, you try to become the *type of guy who wears leather jackets*. I'm not saying this is great, but it's what I notice that I do, and I think a lot of others have a similar experience. For a lot of us, buying new stuff is far beyond the point of necessity. But we still do it, partly because we change, and partly we want the new stuff we buy to be agents of change. I bet a smart capitalist or philosopher has already written about this.

We offered anyone who came by some free lemonades and stickers. Even though most of them didn't end up buying anything, it felt nice making someone slightly happier that day, and this was the nicest thing about selling the stuff itself. I didn't like my bright blue white button down shirt anymore, but someone else did, and he liked it enough to pay me for it, and that feels nice.

Even though I got bad sunburn, it felt refreshing to just be sitting there in the sun, feeling totally content, because sitting out in the hot sun selling old clothes and chugging lemonade to cool down is *what I should be doing right now*. It also made my full time job feel so unnatural by comparison.

If you have a bunch of shit lying around and this makes you feel uneasy, I highly recommend gathering some friends, packing your shit, and doing a yard sale.

curdish

## mathMEWS

### PRESENTING A PROOF WRITTEN BY MY CAT

**Prop:** Meow  $\mathfrak{R}$  mew mow commutative (unital) ring. Meow  $\text{Nil}(\mathfrak{R})$  mew mrow set mew meow nilpotent elements mew  $\mathfrak{R}$ . Mrowr  $\text{Nil}(\mathfrak{R})$  mew meow ideal mrow  $\mathfrak{R}$ .

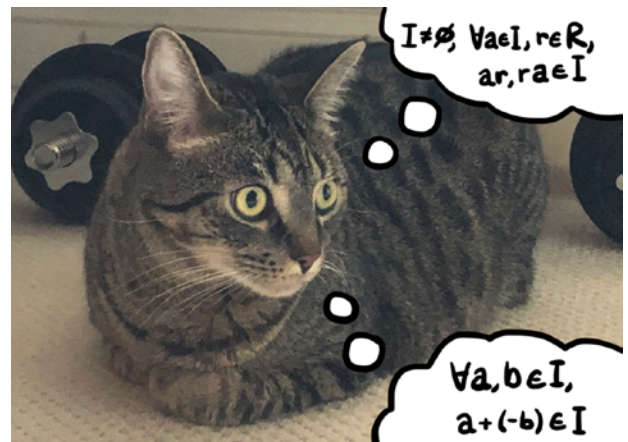
**Proof.** Mreowr,  $0 \in \text{Nil}(\mathfrak{R})$ , mew  $\text{Nil}(\mathfrak{R}) \neq \emptyset$ .

Meow  $\mu_1, \mu_2 \in \text{Nil}(\mathfrak{R})$ . Mrowr meowr mreow  $\xi_1, \xi_2$  mew mrow  $\mu_1^{\xi_1} = 0, \mu_2^{\xi_2} = 0$ . Mrowr meowrr  $(\mu_1 + (-\mu_2))^{\xi_1 + \xi_2 - 1}$ .  $\mathfrak{R}$  mew commutative, mew meow binomial theorem, mew mow equal mew meow sum mew terms, meowr mew mrow mreow  $\zeta \mu_1^{\varpi} (-\mu_2)^{\xi_1 + \xi_2 - 1 - \varpi}$  mew mrowr integer  $0 \leq \varpi \leq \xi_1 + \xi_2 - 1$  mew mrowr  $\zeta \in \mathfrak{R}$ . Mrow meow mew mroww term, mew  $\varpi \geq \xi_1$ , mrowr mew term mew  $\zeta' \mu_1^{\xi_1}$  mew mrow mew  $\zeta' \in \mathfrak{R}$ . Meowroowr, mew mrow mew mrow  $\varpi < \xi_1 \implies \xi_1 + \xi_2 - 1 - \varpi \geq \xi_2$ , mew meow term mew  $\zeta' (-\mu_2)^{\xi_2}$  mew mrow mew mrowr  $\zeta' \in \mathfrak{R}$ . Meowr mowreow mew mrow parity mew  $\xi_2, (-\mu_2)^{\xi_2} = \mu_2^{\xi_2}$  mew  $(-\mu_2)^{\xi_2} = -\mu_2^{\xi_2}$  mew mrow mew meow mew meeowr  $0$ , mew meow mew mew meowr  $0$ . Mreeowrr,  $(\mu_1 + (-\mu_2))^{\xi_1 + \xi_2 - 1} = 0$  mew  $\mu_1 + (-\mu_2) \in \text{Nil}(\mathfrak{R})$ .

Purrrrr, meow  $\mu \in \text{Nil}(\mathfrak{R}), \zeta \in \mathfrak{R}$ . Mrowr meowr mreow  $\xi \in \mathbb{N}$  mew mrow  $\mu^\xi = 0$ . Mrowr  $(\mu\zeta)^\xi = \mu^\xi \zeta^\xi = 0$ , mew  $\mu\zeta \in \text{Nil}(\mathfrak{R})$ .

Mreeowrr, mew mew ideal test,  $\text{Nil}(\mathfrak{R})$  mew mew ideal mew  $\mathfrak{R}$ .

■ Nyaa~!



hyperlynx

# PSA: CANADA'S ELECTORAL BOUNDARIES

The skateparks are abuzz. The nightclubs can't stop talking about it. University students are discussing how it may change the Canadian experience forever. It is the epitome of cool.

The Canadian Electoral Boundaries Commission has released all 13 of their provincial Electoral Boundaries maps that will be used for the next decade to determine the boundaries of ridings starting in 2024!!!!!!

Unlike the United States, Canada has had a non-partisan committee that decides the boundaries of our electoral districts since the 1960s (thanks Manitoba!). Every 10 years following the release of the Canadian Census (another exciting event), the independent Electoral Boundaries Commission is tasked with drawing up new ridings to try to reflect Canada's growing population (while keeping the population of each riding at about 100,000 people). This is important, as it prevents politicians from aggressively interfering in the redistricting process to benefit their party, as occurs in the United States. A gross example of this is the famous Dan Crenshaw "eyepatch" congress district<sup>3</sup> that twists and turns the reaches of northern Houston in order to guarantee a Republican victory. This interference of creating new districts is known as Gerrymandering, named after 1812 Massachusetts Governor Eldridge Gerry, who created a district for himself said to resemble a mythological salamander. Canada's introduction of an independent commission was seen as ahead of its time and has saved us a lot of headaches.



FIG 1: GERRY'S "MANDER"

Now that we've established the Canadian Electoral Boundaries Commission is and why it is totally radical, let's shift to what this year's decisions mean for you;

- Canada has gone from having 338 federal ridings to 343 ridings, which means the provinces of Ontario, Alberta, and British Columbia have gained gained ridings. But some specific regions, such as Northern Ontario or Toronto, have lost ridings.
- The boundaries of all individual ridings have changed slightly, which means you may now be represented by someone new.
- Due to a variety of really old-fashioned laws, Canada's ridings remain not exactly proportionally

representative. You could take PEI, which has about 1 riding per 30,000 people, or the aptly named Niagara Falls—Niagara-On-The-Lake, which has a population of 113,503.

- If you live in Waterloo Region, things have mostly stayed the same. However, Cambridge has become much smaller, while the neighbourhood of Bridgeport has moved from the riding of Waterloo to Kitchener Centre, putting you in Green Party Representative Mike Morrice's riding. Guelph has also been shrunk, meaning if you live in the stubby south part of Guelph you are now represented by Michael Chong of the Conservative Party.

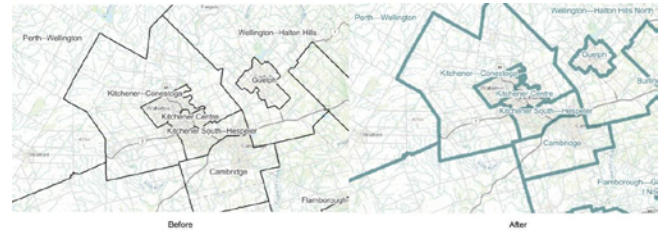


FIG 2: THE NEW RIDINGS FOR KW BEFORE AND AFTER 2024

- If you don't live in the Waterloo Region, check the map.<sup>1</sup> You might be surprised at who your new representative is. In my case, my riding has shifted from mediocre but sane Liberal/NDP MP and MPP to some more interesting characters. While my previous MP was only known for getting in the odd fight on Twitter, my new MP hosted a far right German politician during her anti-vax convoy tour. My new MPP is known for being the secretary to the education minister despite being homeschooled his whole life, and for singing a rendition of "The Monster Mash," when he voted to cancel Ontario's original cap-and-trade carbon tax. It is better you figure this out now than find out unprepared in the future.

Therefore, I rest my case that this report's release is in fact cool. Please go to your local skate park or nightclub and spread the news. Whether you like or dislike your representative better than before, VOTE when given the chance. You can be the change in who represents you and define what your new riding is.

Lars Nootbaar

1. <https://redcoupage-redistribution-2022.ca/ebv/en/?locale=en-ca&prov=on>
2. <https://www.vox.com/2014/4/15/5604284/us-elections-are-rigged-but-canada-knows-how-to-fix-them>
3. <https://twitter.com/lawfollower69/status/1195515746157309953>

# THE FALSE VICTORY OF MISINTERPRETATION (PART 1)

## THE DAWNING OF A MISTAKE

It was a dull Monday afternoon—uneventful, really—when Robbot and I were presented with a problem. One that intrigued us. One that challenged the limits of our imagination and limited our sanity. It was graph theory, of course.

**Warning:** the following article contains depictions of graph(ic) misunderstandings. If you feel any of the following quotes resonating with you at a visceral level, please stop reading immediately and take a moment to catch your breath. Also know that we understand, we relate, and we sympathize. Anyway, back to our regularly scheduled moaning:

The two of us set out to prove that the problem statement *must* be true. Intuitively, one could easily work out *why* it should be true. (By the way, in case you're wondering what the problem was, my lips are sealed. There's a good chance that the attentive readers among you will guess what the problem is, who we are, and judge us with silent fits of mocking laughter. It was graph theory. 'Nuff said.)

But if the problem is intuitive (*I hear you ask, in my delirium*) why did we want to prove it? Excellent question, imaginary reader. Robbot's answer to that should fall under the category of "Famous Last Words at UWaterloo":

"I'm not convinced."

Hence, the need for a rigorous proof. And so we sketched out proofs, argued, used up precious marker ink, depleted valuable real estate on whiteboards, and argued some more. Our conversation became heated, our proofs more convoluted. After an hour of this back-and-forth, Robbot exclaimed that the statement was clearly obvious, to which I issued a swift rejoinder:

"If it's clearly obvious... Why aren't we done yet???"

This was met with silent agreement, and so we continued. Our quest led us to a research paper on this topic. We read it, hoping we would find answers; we found citations instead. Dismayed but undeterred, we followed the yellow brick road to what we found out to be the original proof for this statement. Thrilled, we read through the paper, hoping against hope that our curiosity would be sated. Two seconds later, I exclaimed thus:

"Wait, how is the proof complete?! It's one sentence long! My life is a lie!"

To be fair to me (a philosophy I urge you to adopt) I was scanning for some species of Q.E.D so that I could work backwards from there, and I *did* find a line that said "and the proof is complete." The proof was not, in fact, one sentence long; it was a paragraph long, which we felt was all for the better. In an attempt to save face, I quickly followed the above outburst with something remarkably more tame:

"Oh wait, there's more. I feel vaguely ashamed."

And so we persevered. Alas, the proof made no sense to us. In hindsight, this is understandable: our brains had become a spectacular form of goo after all the stumbling in the dark we'd been doing for the entire hour before.

Sadly—and Robbot concurs here—the wording of the paper was, shall we say, "a little off." They fused three different cases into a single paragraph, which is perfectly understandable in retrospect, but at the time was about as clear as my eyesight without glasses. (And I've been wearing glasses since I was 6.)

Nevertheless, we tried harder. And harder. We expanded our sources and came across a set of slides from Stanford, which provided three claims on this topic. Note: three claims, no proof. Or rather two non-proofs and one sort-of proof. If I sound pretentious at this juncture, my apologies. Or not. Anyway, we approached the paper again, now armed with the knowledge of the Stanford Slides. We analyzed each line through this new lens that our refrain soon turned into an exasperated joke:

"BuT sTaNfOrD sAiD..."

Seriously, I have nothing but respect for the sophisticated and groundbreaking work at Stanford, but we're so irritated by those slides that the mere mention of Stanford is enough to send us into fits of ironic giggles. Our pain must be exorcised somehow, I suppose.

But it didn't make sense! *None* of it made sense! I mean, I was able to understand a couple of lines, which I then explained to Robbot with the help of a diagram. I felt so good about myself. I mentioned as much in passing:

"It's gotten to the point where I feel proud for having understood two sentences."

Both of us were slowly coming to the conclusion that the authors of the paper may have made a mistake somewhere, after having gone through the paper (what felt like) 45 times. Worried that I would sound like a hubristic ass, however, I attempted to keep my ego in check.

"They're probably correct; we're just a couple of undergraduates."

Of course, we were too deep in this mess to emerge unscathed. Our only solution was to go further down, exploring and analyzing each line until our skulls started to leak the honest blood of toil. We drew more diagrams; we shouted at each other some more; we exchanged insults; we insulted others in the room, for good measure; we drew more diagrams; we wrote more explanations. By the end, only one thought was crossing my mind, which I ironically exclaimed to a third-party individual who I'm sure was wishing he could be anywhere else:



“You can see the quality of my writing degrade with my sanity.”

Alas, the **mathNEWS** budget is limiting my freedom of expression and I need to halt my train of thought here before it crosses 1000 words. But fear not! Robbot has continued this chronicle, where you will read about exciting conclusions and tremendous disappointments (I think—I haven’t really coordinated this with him).

Good luck on your finals, y’all!

*eternal\_peace*

## WHY WATERLOO CO-OP STUDENTS SHOULD TAKE A LEAP YEAR FOR SIDE PROJECTS

I am currently a student from the University of Waterloo studying CS in my third year already. Due to the economic meltdown, I am unable to find a co-op position on WaterlooWorks. This ultimately got me thinking: “is it practical to take a leap year before entering the co-op program?”

One of the reasons in favour of this is that is you enter the job search with whatever you start university with. Doing side projects is comparable to building a sandcastle in the middle of a hurricane. It is a Herculean task as one must focus on academics to not fail courses, thus leaving no concentrated time for side projects. Pursuing a CS major can be intense and demanding, leaving little time and energy for personal projects. Most of the content learned in later classes (like CS 486, Introduction to Artificial Intelligence) is not very transferable to the real workplace. It is often very theoretical and disconnected to real practical uses. So, it makes sense to take one year to build your personal projects, professional network, and work-life balance.

In conclusion, Waterloo co-op students, especially those pursuing a CS major, should consider taking a leap year for side projects. The analogy of the Herculean nature of maintaining side projects while juggling the demands of course load highlights the shortcomings of the Waterloo co-op system. A leap year provides a respite from the storm of academic commitments, allowing you to focus on your personal projects, improve your portfolio, and foster personal growth. I hope that this article has inspired you to consider this option and make the best decision for your future!

Alex Summers

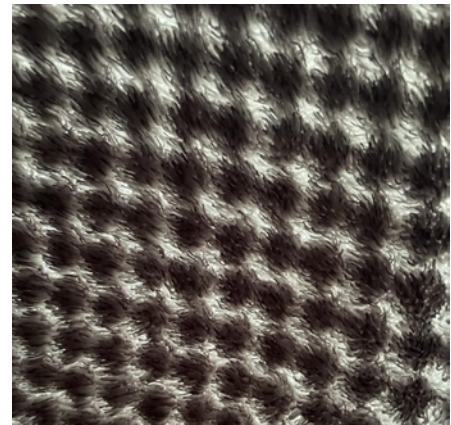
## BABE ARE YOU A MG-RICH AMPHIBOLE END MEMBER?

Because you look like you’re Cumingtonite.

*rockfacts*

## N THINGS TO NOTICE ABOUT A BLANKET

- The blanket is soft and that is nice.
- It is warm under it
- When the light shines through it you can see all the empty spaces between the blanket where it’s just mesh, and all the individual strings



- There are about 30 brown strings per tuft of grey strings in this blanket
- This is fascinating
- These tufts kind of look like clover flowers, which is pretty
- They don’t smell as nice as flowers
- Also they look kinda ugly when the lighting is yellow
- The other side of the blanket looks completely different, there’s no clovers on it
- Would I look cool covered in a wall of flowers
- Or would I just look like I’m dead
- I can feel every single flower that is touching me
- If I focus on one flower everything else is really blurry, like a TV dream sequence or when someone’s high
- Oh hey wait I’m high
- I should write an article about that or something
- That feels like a lot of effort to encapsulate an experienthatIdontreallyknowhowtowrite-aboutanywaysoitallseemskindapointlessanditsnot-gonnahelpmeexpressmyselfforwhatever
- Ooh a sunset

Not a N\*rd

# FIREFLIES

Do you ever wonder why fireflies light the night sky?

They don't expressly need to produce light. Their flashes are so spread apart and so restricted in brightness, their impact is negligible in helping the little bug see. Biologists theorize that it's related to mating, but I think the fireflies' strategy needs work. I've never tried to attract a firefly, but if I did, I think my firefly soulmate would need to know a bit more about me beyond a signal light that I exist.

Maybe not. I'm no firefly.

But it's not as though we have no insight into their feelings. Creatures are so often like us: birds sing just as we do, dogs crane their heads in curiosity paralleling their masters, and cats know human emotions better than we know our own.

So I think we know fireflies.

When dusk crosses the horizon and humans seek to celebrate another loop around the sun, we call on fireworks to envelop the night sky. We remember the sun, and honour it with our own. Fireflies' hands are much too small for fireworks; their thumbs, far too undeveloped to dexterously wield the lighter needed to make a firework ignite. They remember the sun anyway. Fireflies make fire fly.

If you were a firefly, what would you commemorate? What would you celebrate?

What would you remember?

*Lost in the shroud of the forested night, I would remember the time long ago. I would remember our Valinor, in the place where endless miles of lightless rolling fields rise into a twin beating heart; two cities' countless towers painting firelight across the midnight sky.*

*I would remember the times when deep within the dark, electric glow brushed the distant stars. Quiet blues softened conversation inside a nervous system of green, crisscrossing the veil to make connection from isolation. Prisms painted pictures to small screens, telling a tale to create a story not of the events itself but of having heard it together. Kaleidoscopic fairy lights danced across familiar faces, drawing once-guarded emotions from those in agreement to chase the night into dawn.*

*Within the dark, the twinkling sparkle of an unexplored city's fresh-fallen snow complemented the warmth found by adventuring through it together. And when the snow had long passed, the polychromatic radiance of a sleepless world guided the journey through a larger city and unfathomable dreams. Summer grew long, and bonfire flames and the setting sun contested to turn shadows into light, achievements forgotten, unimportant contrasted to celebrating those we celebrate with.*

*One day, within the dark, friends traveled home from the silver screen in a menagerie of blossoming pink and sharpened graphite, the sky fading as they navigated a verdant maze to make it back home. Fireflies flickered fleetingly from the encroaching shadow, and laughter rang into the stars.*

molasses

# IN MEMORIAM

*THE LOBSTER BURGER BAR, (AUG 2020–AUG 4, 2023)*

Have you ever thought of where you'd like to eat if you end up alone.

A Lobster Burger Bar is an excellent choice.

My, my  
In Waterloo the Lobster Burger Bar managerial staff did surrender.

Oh no.  
And now it's met its destiny in quite a crustaceous way.

To drink your  
Wine.  
It's your snappy hour (oh),  
The appetizers price goes down. Time  
In your snappy hour (oh).

Started at the sea bottom,  
Now we're here.

Lobster Burger Near,  
Lobster Burger Far,

Wherever you Lobster Burgers are.  
I believe that my Lobster Burger Heart will go on.

One million, fifty-one thousand,  
Nine hundred and twenty minutes.  
One million, fifty-one thousand  
moments so dear.  
One million, fifty-one thousand,  
Nine hundred and twenty minutes.  
How do you measure?  
Measure two years.

In caged lights, in fake nets.  
In Bud Lights, in cups of Pacific Sweet Water.  
In french fries, in stainless steel vials.  
In draft beer and Sprite.  
In one million, fifty-one thousand,  
Nine hundred and twenty minutes.  
How do you measure, two years in a life?

claws down

# OPINION PIECE: SEX PLAYLISTS

## AND HOW TO MAKE A GOOD ONE

Whether you're setting the mood, trying to calm those first-time nerves, or are attempting to dampen the upcoming obnoxious squeaking that is about to come from your student accommodation bed (because god forbid your roommates know you're gettin' some), sex playlists are a wide-spread attempt to make sex less awkward. That is the key word: *attempt*. I know that this opening probably has me sounding like a disapproving prude, but I promise I am not. My attitude toward sex playlists is best described as contingent disappointment. I think that there is a right and wrong way to do sex playlists, and there are some critical views I have on sex playlists that I *swear* will save you from a lot of interpersonal turmoil post-coitus.

First and foremost, sex playlists are weird. Okay? They are weird. Why are sex playlists such a popular form of self-expression yet so taboo when we actually see one in the wild? Because they just are. It's weird to have a playlist specifically for the sex! Whatever playlist you are using, you should also be able to listen to it outside of boarding the beef bus. Obviously, these will be feasibly musically sex-complementary scenarios. My personal favourites include rainy days, working out, laying in bed in the dark, alone, and (this one is controversial) crying. You can make your own judgment about which other activities match the overall mood you bring to the bedroom rodeo, but if you have an alternative use for your sex playlist, not only does it make you seem like less of a sex freak, but it is also easier to explain to those nosy friends when you're getting ambushed after leaving your laptop open. So, **your sex playlist should not just be for sex—it should be multipurpose.**

Second, any playlist you have on while testing the mattress is automatically, functionally a sex playlist. Yes, this includes what you play in the car with your dad. So, be cognizant about what music is playing before you start to take your pants off. I am going to be vulnerable for a second and tell you that I speak from personal experience. You too may find yourself in the middle of the horizontal mambo until you dissociate out of your body for a second (everyone is allowed a little each time they have sex) and realize you're already at the end of We Are The Champions. It was too late, the song could not be skipped, Freddie Mercury had already serenaded my sexual escapade and I would have to live with that (and also finish doing The Monster Mash). Just make sure that if you're going to have music on during the carnal embrace, **it cannot just be any playlist.**

Third, make sure your sex playlist is long enough... please be generous with your estimation. This is a circumstance in which less is not more. There are few questions harder to answer than in the middle of getting to know someone biblically and they look you in the eyes and ask you why Single by the Neighbourhood is playing for a second time. Why would you ask me that? Or, and this is worse, you forget to hit loop playlist and then it starts playing songs from the recommended tab (you might as well put the Hot 100 from

every year from the last thirty years on shuffle) or it stops playing completely and you're in unexpected total silence with you're doing squats in the cucumber patch. To avoid unwanted questioning by a sexual partner, **do not make your playlist too short.**

Before you make a sex playlist, maybe you should ask yourself whether or not your genitals deserve musical accompaniment. The answer is yes! So do your steed some justice and save yourself from some humiliation.

antacids

## THE 11 COMMANDMENTS OF FUNCTIONAL PROGRAMMING

### ALL PRAISE LAMBDA!

I once found a small tattered book on the rooftop of AL. Its writing was frenzied, akin to the handwriting of a medical doctor. Emblazoned on the cover was but the simple greek letter lambda, and written within was but 10 simple commandments for the "Cult":

1. Thou shalt killeth all functions unnecessary.
2. Thou shalt nameth your functions, unless used but a single time.
3. Thou shalt maximizeth use of the almighty twins, map and fold.
4. Thou shalt properly closeth thee brackets in thyst code.
5. Thou must serveth thy guests curry at all functions and gatherings.
6. Thou shall striveth to uphold the seperation of thee church and thee state.
7. Thou must think, thank, thunk, and thunk\*.
8. Thou shall presseth simultaneously Ctrl and \ to summon the almighty sigil of thy cult in the holy IDE, DrRacket.
9. Thou must optionally becometh a furry or trans. (#transrights)
10. Thou must denouceth ChatGPT, for it is a plague of non-determinism, and living incarnate of behaviour unsavory.
11. Thou shall not denouceth non-members of the cult, for they are not thy enemy, and rather educateth on the ways of Lambda.
12. Thou shall embraceth off-by-one errors.

If you lost the book, I left it with the Turnkey Desk at SLC.

andoiii

# FRAMEWORK LAPTOP PURPLE BEZEL

## A mathNEWS EXCLUSIVE FIRST LOOK AND REVIEW

A few days ago, one of the most highly anticipated products in tech in years was released. Not many people noticed, but I did, and I wasted no time in placing an order. It showed up at my door right before prod night, so without even opening the box, I brought the device to M3 to take a look. As of writing this, no other media outlet has covered this product yet, so **mathNEWS** is officially the first publication to take a look.

What is this incredible product? Imagine a laptop. Now imagine that same laptop, but with the probably-black bezel around the screen replaced with a purple one. That is the Framework Laptop Purple Bezel.

Upon taking a seat in the front row of M3 1006 and lifting the bezel from its packaging, I was met with wondrous stares. “That’s a good purple,” *tendstofortytwo* commented, and I agreed. “I thought it was going to be a dark purple, but this is a much nicer purple.” (The store listing has recently updated the name of the colour to “lavender.”)

After staring at the bezel for several minutes, it was finally time to put it on my laptop. This process is so easy that I’m typing this article on my laptop while doing it. The bezel is attached with a couple magnets and a few strips of reusable double-sided tape at the bottom. The old bezel peels off with a forceful tug, and after taking the protective film off a few pieces of tape, the new bezel can be popped into place. And with that, I am now writing this article on a purple laptop.

I immediately feel superior to my **mathNEWS** writer neighbours, whose laptops are all various shades of black. My laptop already stood out to those in the know because it’s a Framework, but now it stands out *even more* because it’s purple. The pale, brightly coloured frame contrasts well with my desktop background of a sunset on the Grand River, and it makes the screen feel a little lighter and less cut off from the outside world. It’s not exactly the same purple as my purple watch band, but it’s different enough that they look really good next to each other. The purple-on-purple Framework logo text at the bottom is very subtle, and I would have been

okay with a louder option, but I appreciate the effort to be discreet with the branding.

This is a concept that has always unreasonably excited me about the Framework laptop, a computer from a new electronics startup that’s designed to be repairable and upgradable, with many of its individual components user-replaceable. Maybe the ability to replace or upgrade your motherboard or GPU or charging port should be a little more exciting, but there’s a serious problem with technology that’s almost as bad as piles of toxic e-waste accumulating in landfills (okay, not really): computers all look kind of boring now!

Between the aggressively-styled gaming laptops, the MacBook lookalikes, and the corporate-looking business machines, there aren’t a whole lot of options for how laptops look these days. Phones, too, which have been rectangular for a decade, somehow now look more rectangular than ever, having all adopted the same design of borderless screen with a cutout for the camera. And though the Framework does fall squarely into the camp of MacBook lookalikes, adding a splash of colour around the screen gives the device a personal touch, like it’s something I own and not the company who made it. Okay, maybe this is still a little tied to the whole right-to-repair thing and the piles of e-waste in landfills. Whatever.

But in a world where everyone else can’t do much more to personalize their devices than slathering the backs of their laptop lids with amogus stickers, I’m happy to have a structural piece of my laptop that can tell the world that I like the colour purple.

The Framework Laptop bezel is available on the Framework Marketplace for \$64 CAD. A bit expensive, but I thought it was worth it. In addition to purple, you can get it in black, grey, green, orange or red. A Framework laptop (sold separately), to put it on, is recommended.

\_\_\_init\_\_\_

## NOT ENOUGH TIME

This is my severalth article I’ve written which says basically “I was going to publish something but I didn’t have enough time ☹️ but it’ll come out another issue!!”.

Most times this happens I should just bite the bullet and not end up publishing anything. This time is slightly different; while I don’t have anything ready, what I was hoping to have done for this issue makes reference to others who will have graduated by the start of next volume. It’s very frustrating that publishing it then will to some degree appeal less to the ever-changing readership of **mathNEWS**, and makes me wonder if I should even submit the article at all.

Then again, any article which refers to others in **mathNEWS** already doesn’t really appeal to its general readership and is mostly a self-serving kind of in-joke. By that logic, it doesn’t really matter much if I publish it later.

Hopefully next term there will be enough time, as there’s never enough of it now. I’m glad to say I’ve been able to spend it with certain others, even if not writing about them.

cutlet

# FIRST THOUGHTS OF HOLO ADVENT

## NERISSA RAVENCROFT

Nerissa is the demon of sound, and man does it show. She has an amazing singing voice, portrayed through her English cover of *Aishite* which she even translated herself! Its a bit too early to say, but from the way she introduced herself, she seems to be the Hoshimachi Suisei of HoloEN.

Her debut stream was extremely good as well, as it started off with a short animated film which perfectly fit with her introduction and her lore. I think that effort and budget-wise, Nerissa spent the most on her debut which perfectly displays her enthusiasm and commitment.

Personality-wise, she seems to be the fusion of Kronii and Fauna, or to put it more bluntly, Kronii if she wasn't sleep deprived and depressed. Her stance on loving pineapple pizza and refusing to wear underwear makes her even more lovable than she already is.

## KOSEKI BIJOU

After 3 years, the PowerPoint presentation debut has resurfaced in the form of Koseki Bijou! Arguably the most memorable debut stream of this gen, Koseki Bijou nailed her PowerPoint stream with her totally unique slide transitions. We can obviously see that she is incredibly relaxed and just does not care, as in the middle of her stream she edited her dislikes into pickaxes. Surprisingly though, even though her debut may not have had the most effort put in it compared to her peers, her debut stream is still the most viewed at the time this article was written (808k views).

Bijou also has a really beautiful voice, especially with regards to singing as shown by her cover on *Kyoumen no Nami*. In addition, the music video was also phenomenal, where she probably spent all her money on, leaving her to have to skimp out on her debut (not that I'm complaining though, the PowerPoint was amazing). Another interesting fact about her is the games she likes to play, especially with MMOs like Final Fantasy and also JRPGs like Kingdom Hearts, of which Ina definitely appreciates.

## SHIORI NOVELLA

As Shiori said herself, she is the epitome of your hot goth gf. That paired with the fact that she is a bibliophile and the fact that she knows how to use Unity (game dev moment?) instantly makes her my oshi, especially since she is unhinged as well.

Another notable characteristic about her is her streams. She said that she plans to do a lot of educational, chemistry and anatomy streams. This is a big change of pace especially since many vtubers, especially in Hololive, don't really do educational streams. I personally wish we have more math streams like the ones Ollie did though.

The one issue I have is that she didn't release a cover along with her debut like the other HoloAdvent members did. But honestly, her personality made up for it.

## FUWAMOCO

2 vtubers, 1 channel. From what I know, this is a concept explored once previously with Go Go Nippon (hint) and I am really interested in how this plays out. They have a built-in collaboration feature since most of their content will be done together, and from their debut streams and their weekly Monday morning stream, FUWAMOCO Morning, their dynamic seems to be exceptional. They bounce off each other really well and it feels very natural.

Their personality also meshes perfectly. Fuwawa (the older sister) is more quiet and subdued whereas Mococo (the younger sister) is more rambunctious. The dichotomy of their personalities fits both character tropes that most vtuber fans love.

Also, the fact that their birthdays are side by side is low-key genius, as they are going to milk tons of cash from that.

Design-wise, FUWAMOCO has probably one of the best designs, only topped by Shiori. They look similar enough to be twins, but the "subtle" differences in their design make each of them stand out enough for viewers to recognize which is which and also appeal to different audiences.

Their voices also fit together really well, as showcased by their cover on *Kaibutsu*, which is very fitting considering their lore.



In conclusion, Hololive has really struck gold with the HoloAdvent talents. All of them fit in their specific niche that isn't really filled by the other HoloEN members. Their debuts were also fairly successful, each of them having about 60,000 or more viewers. I am extremely excited to see where each of them will go from here, and I hope that they are able to fit in with the Hololive community in general and achieve their goals.

Fried Rice

Ah, Rust. The Pascal of low-level languages. So many rules.

PROF. BRAD LUSHMAN

# BEAVERTAILS

One of the mountains in Metro Vancouver is Grouse Mountain, famous for all the winter activities it's home to. In the summer, there are also the shows, or the mountain top trails. You can go up by taking the gondola, or if you prefer, do the Grouse Grind up the mountain instead. This article will not be about any of that, but instead the small Beavertails shack on Grouse Mountain.

It really is small. At most only two, maybe three employees can fit in there. Of course, with only outdoor seating, you get to take in the mountain views as you enjoy the delicious Beavertails and hot chocolate. Although, if you are there in the winter, you might need to clear the snow from the picnic tables yourself beforehand.

As a child, when our family would go up Grouse Mountain, going to the Beavertails shack was a must. It was pretty much the only time we could have them since there aren't a lot of Beavertails locations around. The menu mainly had sweet options, but there were a lot of options. It was definitely enough to give you decision paralysis. Just about any kind of sweets or chocolates you could think of featured in a Beavertails pastry. There was even a cinnamon Beavertail that I thought was fancy since it came with a wedge of lemon. However, unlike the rest of my family, I never went for the sweet options. My favourite Beavertail was the savoury Garlic Butter and Cheese.

It was not a popular one, although occasionally I would get complimented by the cashier that I was such a cultured kid for liking the Garlic Butter and Cheese Beavertails. As I got older, we still went up Grouse Mountain and had some Beavertails each time, and being observant, I noticed that there would be fewer and fewer options on the menu over time. Until one day, we go up, and at the Beavertails shack, I saw that the Garlic Butter and Cheese was removed from the menu.

I was devastated. I didn't know what to get after that. None of the remaining menu items had the same allure. Some of them were also much too sweet for me to handle. As Beavertails declined in its menu, so would our visits to Grouse Mountain. In my teens, years would go by between visits. Years went by without any Beavertails.

That was until, September 30, 2022, when a Beavertails food truck came to Renison for a couple hours. It was my first chance in years, so I took it. The price of \$8.50 for one seemed high, but that's what inflation does over more than a decade. I knew the chance was low, but I still asked if they had the Garlic Butter and Cheese and, sadly, they didn't have it. They told me how they heard themselves how good it was from others, and how they wished to try it someday. They said that a location in Ottawa may possibly be the only location left in Canada that has Garlic Butter and Cheese. Unfortunately, Renison is not Ottawa, so I took a scan through the menu, and gave it a chance with the Strawberry Cheesecake Beavertails. It definitely wasn't available on Grouse Mountain before.

It was good. I liked the strawberry flavour. I have finally found — not necessarily a replacement — but the next best thing. I would rather still have some Beavertails than none, and Strawberry Cheesecake provides precisely that option for me. It is still quite sweet, but not too sweet like some of the others. I think it is thanks to the strawberry that the sweetness was not too harsh.

I still hold on to the idea that eventually I may be able to again try the Garlic Butter and Cheese Beavertails. I hope for its widespread return some day. One day.

*boldblazer*

## THE TRIALS OF FIRE

### AN UNFORTUNATE LIMERICK

These are the trials of fire;  
the flames that burn tall on a pyre.  
An urge to resist,  
A want to desist,  
The need to roast s'mores on a wire.

*eternal\_peace*

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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# MADELINE

I have a friend called Madeline.

Maddy said the sole cornerstone of her entity is the observation that humans are inherently evil. She demanded this exact sentence be flaunted, first and foremost in the article, if I ever were to write about her. Ladies and gentlemen, prepare yourself to be convinced that there are no good people in the world. Maddy is very confident about this.

Maddy's first supporting argument to be presented ties to the definition of the adjective "selfish." This term is pejorative because the exclusive or excessive focus on one's own self is, obviously, in opposition to God's altruistic intention for humanity:

*"Do nothing out of selfish ambition or vain conceit, but in humility consider others better than yourselves."*

PHILIPPIANS 2:3

But is asking others to be selfless not selfish in nature? Of course, Maddy is not the only person to find the irony funny, as evident in modern psychology's commitment to the selfism philosophy. It is as selfish to criticize another for being selfish as it is to be selfish oneself. We have no other choice but to embrace it. "Except there is a choice," Maddy said. "Although we are all too selfish to pick the other option."

Maddy acknowledges that humans are not entirely foul and vile creatures with cold black hearts, but what is a burst of benevolence against the otherwise consistent indifference or even cruelty? It is ridiculous to look at the modest percentage of human interactions that qualify as acts of true altruism and say, hooray, there is still good in the world.

"But it works both ways," I countered. "If we are not so great due to such a co-existence of good and evil, then we are also not so bad."

Maddy clarified: "My point is that the bad outweighs the good."

"But that good must count for something," I tried. "Perhaps we can all atone for our sins."

It had been our first encounter at an uneventful speed-friending event on a dreadfully dingy day. The wary drizzle, having started almost silently in the morning, quickly abandoned all its timidity after the sun threatened to take over, crescendoing into a storming mess of dissonance. Maddy had made an arrival six minutes too late, in a good mood, despite the rain that wept around her. The faint light flickered happily in rhythm with the water droplets sliding down Maddy's umbrella, which she gently leaned against the wooden table, as we huddled around in groups of three.

The other girl at our table did not seem to particularly like Maddy. "It's sad and pessimistic," she announced, "your view on humanity."

Maddy was genuinely confused: "Because I don't think you're a good person?"

"Because you don't think anyone is a good person."

"And why is that 'sad and pessimistic?'"

"Well, is there anyone you love? Are they not a good person?"

"I wouldn't not love them because they aren't good people." Maddy paused. "Hey, that's actually very optimistic, don't you think? To see the world in all its tainted glory, and still to love it?"

"I think," the other girl said sharply, "that you shouldn't be so caught up with proving everyone to be flawed. Don't you think that's quite sad? To forcibly divide people into 'good and bad,' when they can simply be either 'charming or tedious?'"

Maddy sadly informed her: "But that still wouldn't work in your favour."

The small coffee shop rustled with sudden movements as its patrons, orchestrated by the event organizers, shuffled about to find new conversations. The other girl scoffed before following suit. "I sincerely hope that you at least think of yourself as a good person." She commented. Another guy migrated to our table, and Maddy's umbrella was knocked over by all the action.

She stared at her coffee mug, half empty.

Maddy confessed to me in a hangover much later that she also thought of herself as a bad person. Unkind enough to be served as a final exhibit for her own arguments about our hopeless nature, adequately heartless that her search for immorality could be merely an attempt to find company. She had cried in my arms, but my consolation was as futile as her restless pursuits for atonement.

The new guy was quite nice. "I hope that it stops raining soon," he said, to which Maddy replied, "I've grown to love the rain, actually."

Did she need to be forgiven? Did she want to be loved despite her "tainted glory?" Maddy shook her head to both of my questions.

Salvation lies within, she told me.

# profQUOTES

## CS 489: GLADIMIR BARANOWSKI

“ How do we measure light seen in the human eye? We grab a graduate student, sedate him, slap him, and ask him what he sees.

## ECE 327: NACHIKET KAPRE

“ It took me several months to understand this as a PhD student, so let’s hope you can do it in *[looks at watch]* ten minutes, because you’re at Waterloo.

## CS 241: GREGOR RICHARDS

“ Is it possible to fix this issue with reference counting? Short answer: no. Long answer: noooooooooooooooooooooo oooooooooooooooooooooooooooooooooooooo.

“ Graph colouring isn’t just a masturbatorial exercise for mathematicians, it’s actually useful.

“ I have very strong opinions about IR design. Ondřej Lhoták has very strong different opinions about IR design. If you want to see a fight, get us to argue about IR design.

“ They can’t fire me for having bad perceptions survey results, but they can make me teach CS 246 again. So, punishments are available.

“ *[Suspicious roaring sounds nearby]* The beast! The beast does not like optimization.

“ That’s 4 times 12. What have I done? *[Struggles to calculate 4 times 12]* Let me count by fours instead. *[Struggles to count by fours]*

“ If I subtract 16 from 1024 — why did I challenge myself to such difficult mental arithmetic? Uhhhhhhhhhhhhh I am very bad at mental arithmetic... 1008. *[Looks at the next calculation]* *[Pulls out a calculator]*

“ Best fit is called best fit because it’s the worst option, and worst fit is called worst fit because it’s the best option.

“ I don’t know if my brain is pickled to find hexadecimal arithmetic easier than decimal arithmetic. I don’t know how to feel about that.

“ Yeah, I want all those children to die, that’s fine.

## SPCOM 223: BRIAN LEFRESNE

“ If you even mention the word “casino” in the American South, you’ll get beaten to death with crucifixes.

## CS 251: ZILLE HUMA KAMAL

“ *[Student suggests that perhaps a computer could interpret a number as two’s compliment]* Good, but computers are **not** God.

“ You know what they say about nice guys? *[pause]* They get — evicted — first.

“ Do not confuse yourself; I will do a good job of confusing you.

“ Just like you woke up this morning and thought you looked really nice, and I let you believe that, virtual address space is like that — a figment of your imagination.

“ *[Shows file called “ass\_eg”]* This is called “assembler example”. I’m not going to say the file name because that would make me swear. I don’t know why I didn’t pick another name.

## CO 250: VIJAY BHATTIPROLU

“ Since this is my last lecture, I’ll give out some unsolicited advice. Stop caring about grades and try to digest the high level ideas.

“ Obviously, 3 is smaller than or equal to 1.

## CO 250: KANSTANTSIN PASHKOVICH

“ *[Student answers a question]* That sounds correct. That sounds correct, but it is not.

## CS 230: MURRAY DUNNE

“ This is the  $F=ma$  of computer science.

## CS 234: CAMERON MORLAND

“ If you were in math, you would have taken MATH 135 and damaged your brain! You would be good at modular arithmetic.

“ Our small is quite big.

“ Next week I am in Banff, not skiing but doing Math.

“ I’m going to get out so I don’t kill someone with an axe.

## CS 234: KAREN YEATS (SUBSTITUTING FOR CAMERON MORLAND)

“ I’m gonna channel my inner eight-year-old and put all the inside nodes in a cloud. *[One minute later]* The point of that was not to draw clouds and diamonds on the board.



**CS 240: ÉRIC SCHOST**

“ [Student yawns loudly] Yeah, it’s hard for everybody.

**CS 245: KRIS FRASHERI**

“ Have you guys seen Robots? Great movie. Especially when it’s 3am and your brain is not working. The technological capabilities! That’s ChatGPT my friends!

“ We’re gonna do it with Peano arithmetic. We’re gonna make math great again... Woah...

“ Some universities take it a bit further. They use the programming language Coq.

“ NO, NO, I’m not showing you my Coq... you all woke up, I used the funny word.

**CS 341: JESSE ELLIOTT (ISA)**

“ Does everyone know what linear algebra is?

“ Y’all know what the contrapositive is?

**CS 341: ARMIN JAMSHIDPEY**

“ If someone asks you how you feel about the exam, what do you say? [Students: good, bad, etc.] No. You say you feel nothing.

**ENGL 306A: RANDY HARRIS**

“ I didn’t see the coronation of King Charles, did anyone see that? [Class shakes heads] Good.

**MATH 245: RUXANDRA MORARU**

“ I have therefore created a new assessment named “Ass 1.”

“ On LPs and CDs, there used to be bonus tracks where at the end, there’s silence, and you’d have to wait for a bit to find the next song. Maybe [on the review package], if you scroll far enough, you’ll find the final exam.

“ That’s poor board work on my part.

“ Oh! It’s the Identity Identity Theorem.

**PMATH 347: DAVID MCKINNON**

“ At this point, you folks have enough technical background to understand one of the classic lame jokes in pure math. What’s purple and commutes? An abelian grape.

“ There’s a lesser-known follow-up to this classic joke. What’s purple and commutes and has seventeen followers? A finitely-venerated abelian grape.

“ And now you can inflict this pain on others.

“ It’s not: the number of elements of  $A$ , whose order divides  $p^k$ . It’s: the number of elements of  $A$  whose order divides  $sp^k$ .

“ bafflegab

“ Technically,  $Z$  is not a subset of  $Q$ , but nobody has ever uttered that sentence without smiling.

**PMATH 351: ALEXANDRU NICA**

“ Any questions? Ah yes, my usual clients.

“ Finally, we have a theorem which is less than 100 years old.

“ [Writes on board:  $(f * g) * h = (f * g) * h$ ]

“ [Student’s phone rings] Ah, Mom is calling again... “Why don’t you visit me back in Bucharest?” Because I’m teaching. Not done yet, Mom.

“ My accent might make you confuse lattices with that salad thing.

“ Expect the worst.

**STAT 331: PETER BALK**

“ Now you just do some Good Will Hunting, crossing things out, and you get  $p+1$ .

**STAT 333: SURYA BANERJEE**

“ This problem is difficult to explain to your generation. Back in the old days we used to have these things called landlines. What we are dealing with is a historic problem.

“ Is it just me, or is this room hot? Feels like India. I’m getting nostalgic.

**PMATH 450: BLAKE MADILL**

“ Say the f-word again.

“ You’re gonna love it... just kidding.

I’m a big fan of the game Go. Any game where the rating is in “dans,” I’m a fan of.

PROF. DAN WOLCZUK

# ONTARIO'S DISNEYLAND PLANS SPARK CONTROVERSY: DOUG FORD'S VISION

In a dazzling announcement that left jaws agape, Doug Ford revealed plans to relocate Florida's Disneyland Resort to the Ontario Place grounds. The ambitious proposal includes an expanded amphitheatre for fantastical performances, a public beach adorned with magical sandcastles, enchanted bars and restaurants, a new marina fit for mythical creatures, and a massive spa where tired princesses can get their much-needed beauty rest.

Ford, donning a crown and robe, proclaimed that moving Disneyland to Toronto's waterfront was crucial. "Fear not, for the old kingdom shall be razed to make way for this magical endeavour," he decreed at a news conference. Construction on the enchanted park will begin in 2025, with a promised grand opening in 2028.

The new Disneyland establishment will merge seamlessly with the cinesphere and the pods that were part of the original Ontario Place design, planners say. Gargantuan roller coasters and mesmerising thrill rides will now coexist with Toronto's stunning natural landscape.

As expected, the grand project carries a hefty price tag. However, Ford coyly waved away concerns, insisting that generous patrons, including Live Nation and the government of Florida, would fund the fairy-tale establishments. According

to Grand Wizard Kinga Surma, a business case indicated that building Disneyland at Ontario Place would be more cost-effective than leaving it at its current location 2000 kilometres south of the city.

But not everyone is enchanted by Ford's vision. The NDP, represented by Lord Chris Glover and Lady Bhutila Karpoche, issued a stern rebuke, stating that relocating the beloved fantasy realm was simply wrong. "Ontarians deserve magical planning, not accursed napkin scribbles," they protested.

Viscount Josh Matlow, ever the skeptic, questioned the necessity of the grand journey. "Why must we embark on this magical quest?" he pondered. "Let's keep Disneyland where it has flourished for so long and focus on building affordable housing within the kingdom's parking lots."

Despite the spirited opposition, Ford remains steadfast in his position, reminding naysayers that Ontario Place's sign proclaims its status as the province's magical paradise, not just Toronto's.

The Walt Disney Company did not respond to **mathNEWS'** request for comment.

*/aeren/^2*

## SNAIL OWNERS PUSH BACK AGAINST STIGMA

The realm of scientific community has been hard at work to resolve a fundamental problem that has been dividing our country ever since the snail adoption trend became viral on TikTok.

The consequences of snail adoption have undoubtedly sparked heated conversations at the dinner table, in classrooms, and even all the way to the House of Commons. Rightfully so, many so-called "snailbros" reported significant negative effects on their mental and physical health, such as higher levels of depression, multiple personality disorder, and spatial disorientation PTSD. Proponents of snail adoption cite studies claiming that snail adoption done right can reduce both mens' and womens' fertility, eliminating the need for hormonal birth control.

The discussion was reignited with the release of a new study by the PhD students at the University of Alberta. Researchers selected a diverse group of 32 snail-owning households. Half of the participants received their snail back in the black container, while the other half of the participants received empty black containers. All participants were led to believe that there was a snail inside the container. Over the course of 6 month, little to no changes to participants' mental health were noted. The study concluded that negative mental effects

of snail ownership were mostly due to societal pressure. The pushback on snail ownership by the conservative right has further stigmatized this marginalized group.

University of Alberta students further theorized the ability to strip all negative health effects by attending personalized non-snail pet therapy sessions. Last Monday, student unions at 14 Canadian universities already organized protests to demand federally subsidized so-called "de-snailing" therapy sessions. A spokeswoman for the Trudeau liberal government addressed the demand in her Tuesday speech: "Our government is committed to providing healthcare for all Canadians from coast-to-coast-to-coast. We are taking all necessary actions to assess the provision of de-snailing to all vulnerable Canadians."

"This is way overdue. I am living in the constant state of fear for my well-being ever since the conservatives started spreading their hate propoganda," said Lauren, a woman who adopted her first snail two months ago. It is a breath of fresh air to see that the narrative is changing—from hate and stigmatization to acceptance and provision of healthcare.

*grandcheburashka and hedgehog77*

# THE FALSE VICTORY OF MISINTERPRETATION (PART 2)

## THE END OF A MISTAKE.

Picking up where eternal\_peace left off. As we noted prior,

*“They’re probably correct; we’re just a couple of undergraduates.”*

It was another hour of messy diagrams, random insults, and unheard-of noises. Unconvinced and unsatisfied, it did not take long for us to turn to the idea of “what if we were actually right, and they are wrong?” Regardless of what lens we looked through, something just did not look right. After all, how did we get from  $k$  to  $2k$ ? What exactly was meant by unicyclic? Is it a contradiction? Why didn’t they say so?

It didn’t take long until the seedling of doubt sprouted. What if we are right and the proof is wrong? After all, there is a non-zero probability that we are right, and the authors wrote a load of nonsense, right? Right? Surely, that must be! How can two intelligent and well-educated young UWaterloo CS students be wrong about this? In what world would both of us be wrong? Surely, our 18+ years of literacy justifies our abilities. ‘Tis the foundation of what allowed us to soar new heights, day in and day out, at UWaterloo; surely it must be solid!

Thus, the time comes when a higher power of arbitration is needed to settle this debate amongst two insolent mortals. It was not long until a form of divine intervention was called upon. First, it was an unnamed Instructional Assistant whose first name begins with “M” and ends with “w”, who presented us with a “fixable” proof. It was an alternate proof, but we were still not convinced. After all, what does “fixable” even mean?

*“I don’t know... I’m not convinced yet.”*

Perhaps a foreshadowing of what is to come, but our hubris knew no bounds. Looking back, we were pretty full of ourselves, weren’t we? It was finally the time when the Higher Beings heard us out, in the form of Prof. Olga Veksler.

There were no coffee nor tea. There was but graphs, and more graphs. What took us 6+ hours to trip through every single ambiguity and every single misinterpretation, the Higher Being took but 45 minutes.

As one sentence led to the next, and to the next; we feel the increasing heat in the room. “If you draw it this way, that does make sense.” As the light of knowledge and literacy shines upon us, we could feel nought but the burning rays of thermal radiation. Our wings were melting around us as our flight eventually crashes and burns. How dare you? How dare you challenge the paper without even understanding what “unicyclic” means? Do you even proof?

*“It’s good to have humour — after all, there was humour in the concentration camps.”*

Dejected, depressed, and despondent were we when the final nail in the coffin was hammered in place. The email 5 minutes after the end of the office hour were we told, “actually, the

conclusion was right if you consider repeated vertices in the walk,” and with it, our ego and our pride were no more. Perhaps the only good coming out of this affair was a good laugh at ourselves. I hope you also have found our journey amusing and had a good laugh at our expense. I would not mind; I would never take offence at your enjoyment at the expense of our embarrassment you little <redacted>. Come here, fight me you little <redacted>, I will beat you up if you laugh one more time you <redacted>. You want a fight you get a fight ya <redacted>?!

*“This is a blatant misrepresentation of our blood and toils.”*

ETERNAL\_PEACE, JUST NOW

Appendix: a selection of Quotes.

- “They’re probably correct... We’re just a couple of undergraduates.”
- “What is ‘unicyclic?’” (Re: “What is ‘illiteracy?’”)
- “If this is clearly obvious, why are we not done yet?”
- “Oooh, I got it! I got it! Now, suppose this is... ughh I don’t have it.”
- “All good proofs start with ‘Let’s assume...’”
- “You can see the quality of my writing deGraDe wItH mY SAnITy.” (Re: *What a weird assumption to have to think we are sane in the first place.*)
- “Wait, how is this proof complete?! It’s one sentence long! My life is a lie!!!”
- “Oh wait, there’s more. I feel vaguely ashamed.” (Re: :upside\_down\_face:)
- “Going to Montreal to visit these guys can be construed as an academic expense.” (Re: Pending approval from the School of Computer Science Administration.)
- “It’s gotten to the point where I feel proud for having understood two sentences.” (Re: I do feel proud a’ya, son.)
- “MMMMMMMMUGH [followed by head hitting whiteboard].”

N hours later...

- “The problem is... I don’t remember anything anymore.”
- “Are you still traumatized?” (Re: Yes.)
- “If we draw it, it will come to us.” (Re: It did, in fact, come to us.)
- “Case (c) is nonsense! I don’t even understand how it came to be!” (Re: I don’t understand how you came to be either :wink:)
- “We are intellectually frustrated.” (Re: Not just intellectually, lol)
- “Graf theerie -> ded :skull:”
- “BuT sTaNfOrD sAiD...”

# LIVEBLOGGING THE GLOW CENTRE POWERPOINT NIGHT

Tonight, instead of attending prod night, I'm attending Glow Centre's PowerPoint night! Everyone is given 20 minutes to make a presentation on any topic of their choosing, then someone else has to present it for them. Now presenting, live as I type this: our collective suffering!

## BARBIE (NO SPOILERS) (FLOPS) (PRESENTED BY COMBINATORICS)

Slay, Barbie. The presenter presents several Barbie movies (the animated ones) much to everyone's excitement, then accuses Barbie of being yassified (isn't she already yassified? can you yassify Barbie?), claims she is in her flop era, then leaves off on the strange note of "you are kenough," and leads everyone in saying "yaas," "slay," "so true," and "ur not a flop [*sic*]," before presenting a choice between being gay or being gayer. Good start.

## RADIOACTIVE DECAY AND THE EXPONENTIAL DISTRIBUTION — PRESENTED BY 2FT GAUGE RAILWAYS

A small lecture on radioactivity? Features the presenter completely balking on what lambda is, even though it's used in their differential equation classes. The model is incomplete though :( There's a lot of equations about uranium-239. My head hurt. I'm genuinely sure everyone here does not comprehend any of this. the presentation gets sidetracked into fanboying about Leonhard Euler and gaslighting a function using logarithms? I don't comprehend ANY of this!!!

## 2FT GAUGE RAILWAYS OF MAINE (PRESENTED BY BARBIE)

"Presented by some poor sap who probably knows nothing about trains." One of the two presenters literally pronounces gauge "guage" right off the bat. But finally! Something I know! a brief history on how John Railways invented railways, explaining gauges and how there were survivors of the railways being torn up?? I have no idea what is going on.

## CANTONESE SWEARS (PRESENTED BY WHY I NEED A GIRLFRIEND)

The presenter is not Cantonese, but the presentation maker is. Want to avoid offending a Cantonese person? Here's the words you'll want to **totally stay away from!** We go through four there, then reach the point where I realize the presentation maker forgot to include tonal intonations, and go through the rest of one very successful presentation!

## THE RED FLAGS IN A PARTNER THAT SIMPLY DRIVE ME WILD (PRESENTED BY CANTONESE SWEARS)

The presenter was the poor sap getting stuck with this. Emotionally stunted? I can fix them. Unable to communicate emotional needs and/or regulate emotions? We love it!!! (Got a little too real.) Indecisive about wanting a relationship so you keep pining? Sweet as! After all, red means go!!!! After an

intermission where you ruminate on the worst partner you've had and wish you had them back, we go back to red flags! Not over their ex? The clown is you, because clowns represent joy! Professing their love 3 dates in and discussing moving in by a month? Get the U-Haul.

## WHY THE ESS COFFEE SHOP IS THE BEST PLACE ON CAMPUS TO GET FOOD (AND EVERY OTHER PLACE CAN SUCK IT) (PRESENTED BY RED FLAGS IN A PARTNER)

The presenter is literally environment-coded because they were wearing green. This was my presentation! (I created it.) It was five minutes of me buttering the ESS Coffee Shop up and providing literally 9 reasons why it was better than every other place on campus. For obvious reasons, it's a joke.

## ACCOUNTING 101 (PRESENTED BY RADIOACTIVE DECAY)

There is nothing more exciting than going over the basics of tax auditing! We also go over assertions, where the presenter asks if we exist. Then tells us we have the opportunity to be gay and do crime, but if we commit tax evasion we will be brutally murdered in our sleep. After all, there are only three constants in life: death, taxes, and Wednesday Frog.

## FLESH IS A PRISON (PRESENTED BY ACCOUNTING 101)

The most surreal presentation? We are told we are a pineapple, and that we cannot escape our flesh prison. Yeah don't worry, I don't get it either.

## COMBINATORICS (PRESENTED BY ME!)

This was not only a PDF, but a bait and switch on celebrating the life of dearly departed, the combinatorics presentation creator, who was killed to death by kindness and Snoop Dogg. I could not read half the presentation because I was on the floor.

## WHY I NEED A GIRLFRIEND (PRESENTED BY FLESH IS A PRISON)

I can cook. I have a cool house. I have a lot of money. Anything else? Need I say more? I even live with 240,000 slugs of various species! I'm emotionally honest! It's followed by the definition of the bull trout, followed by a declaration that they are wanted in most provinces and US states, as well as 19 different countries, but it's okay, they're haters. The presenter is smart but straight up said  $8 \times 3 = 21$ .

## CHATGPT: THE DEVIL'S LINGUISTIC APPRENTICE (PRESENTED BY A LATECOMER)

This presentation was entirely generated by ChatGPT, and the presenter calls it Chat666. Trying to summon a demon? You might summon ChatGPT with tip on how to redecorate your living room.

All in all, this was a trip and a half, but it was fun trying to make presentations and present things that really throw you on an emotional rollercoaster, one after another after another (last 3 especially).

skittlerc

## mathNEWS

### UW REVIEWED 5.5

We sit in a Discord call counting on our fingers until one of us realizes that Winter 2023, our last term, will be the 50<sup>th</sup> anniversary of **mathNEWS**. We double-check, make an off-by-one error, check again. It's amazingly fitting; prophetic. Except I didn't graduate in Winter 2023.

The 50<sup>th</sup> anniversary comes and goes and my friend evaluatED does a fantastic job laying out the whole volume and compiling the **mathNEWS** timeline. girafarig is telling me about the communist downfall of the Chevron. You know, I'm not a history guy, I can appreciate funny stories but I don't feel the life in it, can't quite make that connection between past and present.

Still, I sit in the **mathNEWS** office and run my hands over all the dusty knickknacks in there, trying to imagine another time when all these things were cherished. It never works. I am stuck in my own world.

Many **mathNEWS** writers love **mathNEWS**, priding ourselves on being better than Imprint.<sup>1</sup> I think it's wonderful to love things. I love to love. But artistically, I don't love **mathNEWS**, because to me, **mathNEWS** doesn't really have an identity. We accept almost all submissions. Our writership consists of the current math students who find **mathNEWS** funny enough, and also friends of those students. **mathNEWS** is always in flux.

I'm graduating, and I'll eventually take my voice out of here. In a few years, **mathNEWS** is going to be completely different—it already is different from how it was when I first joined. It is pretty much unrecognizable from what it was 50 years ago. So I can't say that you should join **mathNEWS**, because I have no idea what **mathNEWS** will be like in the coming terms.

What I can say is that I love what **mathNEWS** was at one specific moment. At that time, it completely changed my life. And I will be eternally grateful.

cy

1. Spring 1982 **mathNEWS** editor W. Jim Jordan said it best: "Imprint has to do more than **mathNEWS** to be good. **mathNEWS** just needs to be funny (without destructive humour) and be legible." **mathNEWS** 151.2.

## N THINGS TO BACK UP BEFORE YOU GRADUATE

- feedback on your assignments from Learn / Crowdmark
- files from the student Linux environment / computer labs, including `~/ .seashell` and your precious `~/ .*rc` configs (*unclear how long they last but don't count on it being forever*)
- forgotten projects on UWaterloo GitLab
- co-op work term evaluations and various other WaterlooWorks files (*I was able to email CEE to ask them to send me copies after I graduated*)
- Marmoset
- pictures of your favourite spots on campus
- unofficial transcript
- your favourite memes from the various club Discords you joined
- an up-to-date proof of enrollment so you can renew your student subscriptions one last time
- old resumes
- your WatCard balance (*you can keep using it for 2 years after you graduate*)
- blackmail material to use against your enemies and profs
- STAT 231 Piazza drama
- OneDrive (*you have about 16 months to back it up after you graduate*)
- low-res previews of your grad photos (*there are ways to remove watermarks and upscale them but you didn't hear that from me*)
- pictures of your apartment to prove you didn't burn it down
- a copy of the ransomware used in the Waterloo server hack this term
- your favourite **mathNEWS** articles
- a map of campus before they build M4
- screenshots of the University's response to the stabbing before they delete it out of embarrassment
- one last E5 bridge photo
- your class lists, so you can figure out who the hell is trying to add you on LinkedIn after you become successful
- a map of the plaza before they tear down the Lobster Burger Bar
- the final newsprint issue of Imprint

water

## LOBSTER BURGER BAR IS CLOSING

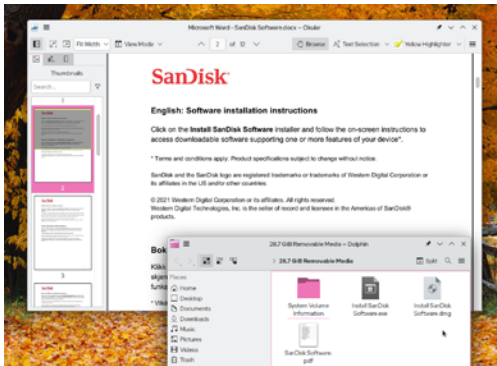
lol

Abald Man

# I BOUGHT A NEW FLASH DRIVE AND THERE WAS A PROGRAM ALREADY ON IT. THIS IS WHAT HAPPENED WHEN I RAN IT!

Recently, I bought a set of three SanDisk Ultra flash drives. I did this because I own exactly one flash drive, also a SanDisk Ultra, and it's been the most reliable drive I have ever owned. Every other drive I've had—even from SanDisk themselves—would either not detect on startup while booting a Linux installer, or would randomly drop out on old USB 2.0 computers, or something else... but this drive *always* works, and that's more valuable to me than speed or capacity.

Once I plugged in one of my shiny new flash drives, I saw something strange:



Why in the name of the editors does my flash drive come with *installable software*? Surely the point of a flash drive is to work across different computers, and surely you're not going to be installing SanDisk Software.exe whenever you plug your drive into your friend's computer? There was no good reason for this software to exist that I could see, and no good reason for anyone to install the software.

So naturally, I installed the software.

I had to move to my Windows computer because unfortunately SanDisk Software<sup>1</sup> is not provided for Linux. But once on the Windows computer, I clicked the installer, to be met with this screen:



The so-called “installer” is just a link to download the actual installer... it doesn't even download and run it for you, it just tells you to Get Off Your Lazy Butt And Go Get It Yourself.

So I clicked the button and went to the link, and after selecting “USB Flash Drives” from the “what product did you just buy from us?” menu, I got this:

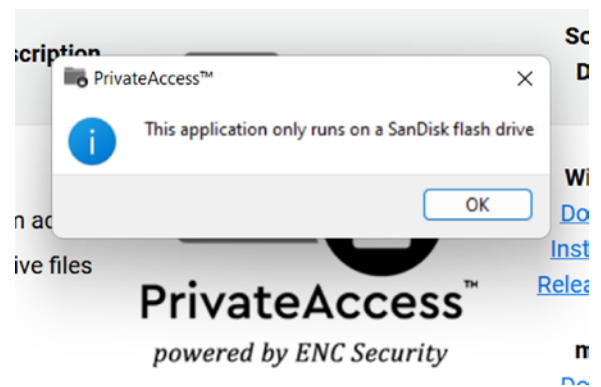
## Download Software, Firmware and Drivers for SanDisk Products

[Español](#) | [Français](#) | [Italiano](#) | [Deutsch](#) | [Русский](#) | [Português](#) | [简体中文](#) | [繁體中文](#) | [한국어](#) | [日本語](#)

Description	Software Details
<p><b>PrivateAccess</b> features the ability to:</p> <ul style="list-style-type: none"> <li>• Create a password to keep others from accessing protected data</li> <li>• Encrypt and protect critical and sensitive files</li> <li>• Backup and restore encrypted data</li> </ul>	<p><b>Windows</b></p> <p><a href="#">Download Instructions</a> <a href="#">Release Notes</a></p>
<p><b>Supported Products:</b></p> <p>SanDisk USB, Xpand USB Flash, Wireless Charger Sync, Extreme Portable, Extreme PRO Portable</p>	<p><b>macOS</b></p> <p><a href="#">Download Instructions</a> <a href="#">Release Notes</a></p>

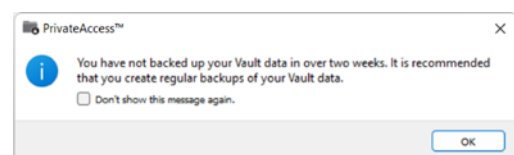
Okay, that's more descriptive! The software is actually called PrivateAccess, and it lets me encrypt files in my flash drive for security/privacy reasons. I can get behind that. Let's get this bread software!

Running the downloaded EXE gave me a confounding error:



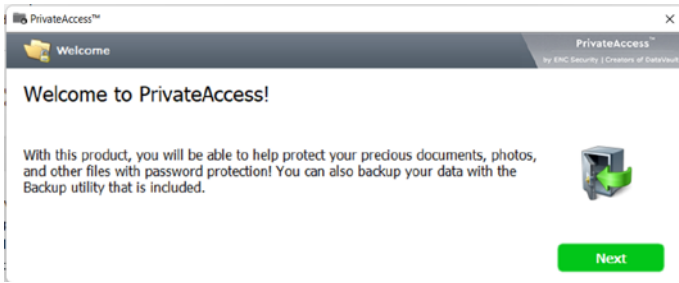
Yes? There's one plugged into the computer?

I thought, maybe this wants to be copied onto the flash drive before running, and tried that. That worked! Confusing, but alright. It loaded some things, and then gave me this:

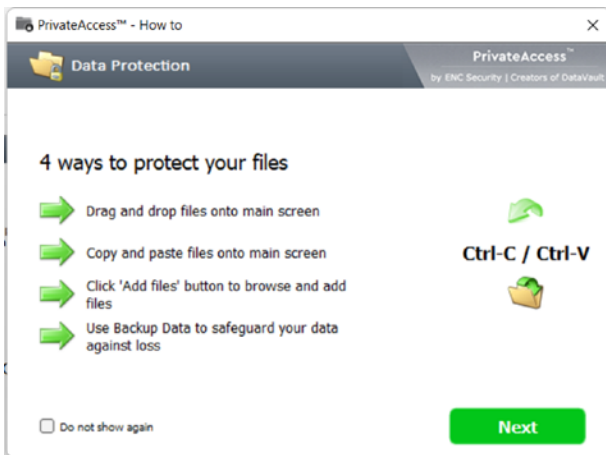


It was right, of course—who knows when my drive might fail? Then I'd lose my one and only copy of Install SanDisk Software.exe, the program that does not install SanDisk Software. You and I know that I have three identical flash drives, all of which shipped with a copy of Install SanDisk Software.exe, but PrivateAccess™ has no way of knowing that.

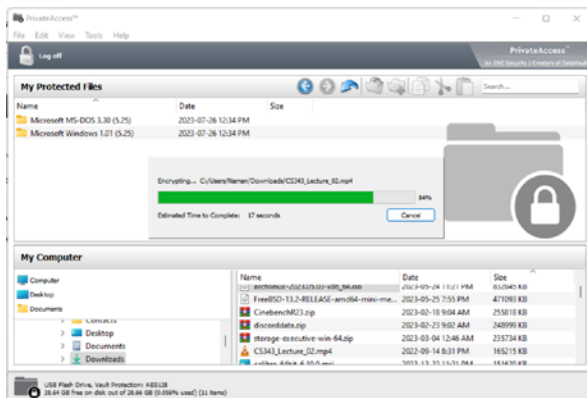
Clicking OK gave me a much friendlier screen:



After signing my life away to the WESTERN DIGITAL END USER LICENSE AGREEMENT, it had me setup a password and presented me with an N Things article... finally, it's speaking my language:



And after that I was thrown into a pretty-alright user interface for dragging and dropping my files onto the encrypted area of the flash drive:

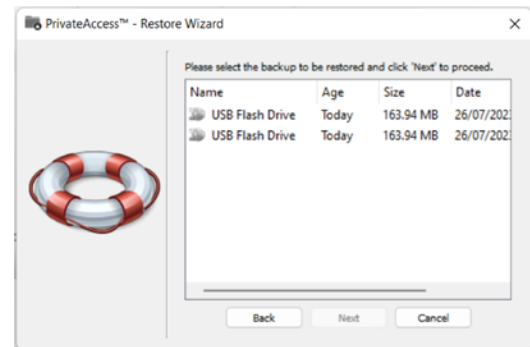


I could double click files to access them directly from within the encrypted container, which is neat:

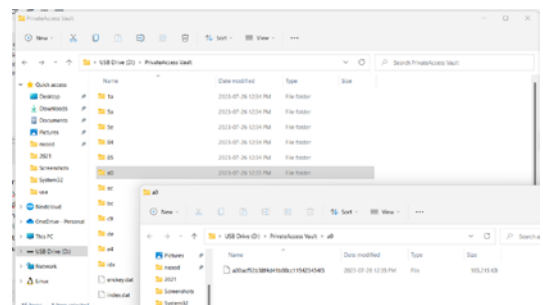


Closing and reopening the program just prompted me for my password and dumped me back onto the main screen.

The Tools menu let me change my password, backup and restore my data, and open an options menu, where I could decide where the data is backed up (“Documents Folder” or “Application Data”), how many prior backups I wanted to retain, and what encryption algorithm I wanted to use (though everything except AES-128 is disabled). From what I understand, backups here are just “when you click the button I’ll copy the encrypted container over to a folder on this computer”), and then restore prompts me which backup to restore from that folder:

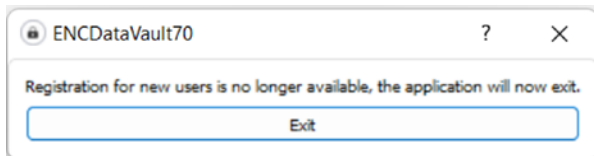


The software seems to have created two folders in the flash drive, one called PrivateAccess Vault, and one called PrivateAccess Settings. The Settings folder contains a bunch of .dat files that I wasn't able to get any information out of—including “filesystem.dat,” and the Vault folder contains similar files, along with a bunch of folders named after one hex byte—and files in that folder with names that are 128-bit hex words starting with that byte.



My guess is that the 128-bit word is some sort of a hash that identifies the file—it's not MD5 of either the filename or the file itself, so my guess is Poly1305 based on basic googling around—and the filesystem.dat files corresponds those hashes to a filesystem tree. It's kinda neat that they wrote their own filesystem structure instead of just encrypting a tar file with all the data, but presumably that's what allows them to open a file and play it live without copying it out or decrypting the whole container.

The creators of this software, ENC Security, also make their own version of a similar system called ENC DataVault, which is flash-drive-brand-agnostic but costs money, and also didn't work when I tried to use the free trial:



Understandable, have a nice day.

Anyway, SanDisk Software, I mean, ENC DataVault, I mean, SanDisk PrivateAccess™ Powered By ENC Security, is a surprisingly nifty utility! I was expecting to rag on some shitty drive health monitoring software, but this is probably somewhat useful to anyone using the flash drive for data backup and security. Shame that it's locked to only run on SanDisk USB drives... but if you have one of those, it's nice to see that SanDisk provides something for you to secure your data. I'm no security expert so I don't know how this compares to more traditional solutions like VeraCrypt—and I would almost certainly recommend you use VeraCrypt over this because it'll be more tried and tested and better maintained at the very least—but hey, it's something, and that's neat.

tendstofortytwo

1. 10/10 creativity

## YOUR EYES

meet mine

your gaze  
a surprise

we danced  
all night

my heart  
traumatized

your love  
a lie

## BIKE THEFT

My family once had this bike. It was silver with large tires and this weird clown-sounding horn button thing instead of the usual bike bell. It was an average-looking bike. I have some great memories of riding with my dad to the park and back on weekends.

We stored it alongside all the other bikes in the apartment building's underground parkade. But one day, my mom went down there to throw out some garbage, and noticed a very familiar bike lock that was cut and left on the ground. Our bike had been stolen.

It turns out that our bike lock was quite resistant. It was clearly noticeable by the markings left behind that the thief took about 4 attempts to cut it on different parts of the lock before getting through.

We found this to be a bit baffling. Out of all the bikes there to steal, the thief somehow picked one of the worst options. The main reason was because of the tires. This bike was old enough where the tires didn't hold its pressure quite as long. The tires only kept its pressure for at most 2 weeks when left alone. For this reason, the bike wasn't used as often, and when it was stolen, the tires definitely wouldn't have had enough air in them.

This wasn't a problem for us since we had a bike pump at home for this bike. Though, it wasn't for just any bike. It was a bike pump specifically for that bike, and just about that bike only.

That bike was not from North America, but instead we got it second-hand from someone who brought it over from Korea when they immigrated. So, the bike's tires were incompatible with the air pump nozzles here. Our other bike had tires which worked with the pumps at gas stations or the pumps which could be found in stores, but not this silver bike.

So, what was the thief going to do with our bike? I don't think they were going to go through all the trouble of changing the tires. If they sold it off (which was likely), then the buyer would be stuck with an old bike for which they would need to buy a brand new bike pump for a nozzle that isn't used in North America. What a hassle!

I wish I could find out what happened to that bike. I hope it wasn't just thrown away. One thing for sure was that the thief lived in our building and yet was never caught.

These days, the bike storage area in the building's parkade was upgraded so it can fit many more bikes, more neatly, though, we don't have any bikes anymore to store there. I wish I had a bike like that again. It would be fun to ride around town like back then. At least I still have the old bike pump.

boldblazer

RyanSamman



# HOW A CRASH IN A PORTLAND NEIGHBOURHOOD CHANGED AVIATION FOREVER

On December 28<sup>th</sup>, 1978, a plane would crash in the suburbs of Portland, Oregon. This was United Airlines Flight 173, a DC-8 going from New York-JFK to Portland via Denver. Even though no one on the ground died, and only 10 people on the plane died, it would change aviation forever.

The flight was on its final approach when the crew lowered the landing gear. However, due to a fault, the right landing gear slammed into place rather than gently lowering. Though it was locked in place, the sudden drop broke a microswitch, causing the right landing gear configuration light to not illuminate.

Captain Malburn “Buddy” McBroom, the professional he is, abandoned the approach, and wanted to be in a holding pattern to troubleshoot the gear light problem. He had over 27,600 hours of flight time and 27 years with the airline. In contrast, first officer Rod Beebe had been with United for 13 years, but had “only” 5,200 hours of flight time. Flight Engineer Forrest Mendenhall was with United for 11 years and had only 3,900 hours. Even with the immense experience, neither Beebe nor Mendenhall would think of speaking up to senior pilot McBroom.

McBroom really wanted to make sure the landing gear was down, and wanted to make sure that the cabin was ready for an emergency landing in case the gear collapsed. However, his sole focus on the indicator light would bring his attention away from the fuel consumption. Beebe and Mendenhall knew that fuel was running low. Unfortunately, they still never thought to speak directly up to McBroom. Almost any references would be indirect, with the hope that McBroom would figure out the fuel situation. The only statements made by the first officer and flight engineer that were somewhat firm about the fuel situation were before the final holding pattern, when Mendenhall was basically saying that the pattern would take 15 minutes, and they would run low at that time.

After one engine stopped working, McBroom was surprised when Beebe said the reason why: “fuel.”

At this point, the flight was doomed to crash outside of any airport. However, McBroom somehow managed to avoid an apartment building, and managed to crash land into a Portland neighbourhood (unintentionally; he thought it was a field from the lack of lights, which was actually trees obscuring the lights) without hurting anyone on the ground. Unfortunately, 10 people, including Mendenhall, would die on the plane when it crashed. Luckily, the lack of fuel meant a lack of fire, so the surviving passengers were not at risk of burning up in the wreckage. They were also prepared for an emergency landing anyways, so they knew the brace positions they had to be in. It just wasn't the emergency they were expecting.

Clearly, the captain fucked up. He lost his situational awareness with the fuel, and didn't get the hints from his

crew members that fuel was an issue. In fact, he swore that the plane had fuel left, and believed that until he died. He would lose his license, and basically be left a broken man, with the immense guilt of killing 10 people, while still wanting to care for the survivors.

However, McBroom was merely a victim of his time. This accident would be the wake-up call for the aviation industry. The crew communication needed to be better. The captain has to learn that they are fallible, and that their crew is a useful resource to use in any situation. The rest of the crew need to learn that they know what is happening in the plane, and can address their issues on the plane with the captain in a calm, but firm manner.

Many accidents before had these problems, but there were other problems that overshadowed the problems: with Eastern 401, you could argue that the plane should've warned them audibly about their situation. With the Tenerife airport disaster (which is the accident that I almost made an article about), you could argue the fog and the lack of formal ATC language was a big part of the collision. However, United Airlines 173 had no other blame. The weather: calm. Instruments: working. ATC communication: fine. Airplane: good, despite the fault that caused the right landing gear to slam down. The only problem was the captain's decision to stay in the air for too long, and the crew's unwillingness (or lack of training) in telling the captain to land sooner.

Crew Resource Management (CRM) would be in development in NASA starting in 1979. They saw the history of air crashes, and saw that pilots were not using the resources in the cockpit to effectively manage a problem. This training was made to address that, and they didn't just stop when creating this training. Five generations of CRM, each building on the previous generation, have made aviation way safer than in the 70s.

United Airlines would actually be the first airline to implement CRM training, starting in 1981. CRM would become a factor in United Airlines 232 in 1989. Although 112 people died on the crash landing, the CRM in that flight would contribute in 184 people surviving, as all of the pilots worked together to make sure the plane could be controlled without any hydraulics. By the 1990s, CRM training became the international standard for pilot training. Today, flying has been way safer than it was in the 70s and 80s, and it's all because of a crash in Portland at the end of 1978.



# SOME REFLECTIONS ON MY EXPERIENCE AT WATERLOO

## RE: NOT TAKING ADVANCED COURSES AND ON HARD WORK VS. TALENT

I started at Waterloo in Fall 2018 and graduated in Winter 2023, and I took the regular courses throughout all of first and second year. That said, I was interested in the advanced courses from the beginning: I wanted to learn; to learn things as deeply as possible. I was most interested in understanding why things were true, but I had no exposure to proofs or higher-level math, no preparation for the Euclid contest (so I scored way below the advanced-class cutoff in my year), and no math background beyond the standard provincial math curriculum of a very average Canadian high school. I was also scared of challenging myself, and gave up easily in the face of difficulty. In retrospect, the policy of allowing people to drop down to 13X at any time was probably designed with someone like me in mind, and I should have at least tried enrolling in the advanced classes, or at the very least attended a few lectures before deciding. But I simply felt too intimidated to do so, and so I never attended any lectures for any of the advanced classes.

Part of the reason for this was the culture surrounding the advanced courses in my cohort. I can't tell if I just interacted with the "bad eggs" from my year, or if this was an issue in every year or if it was just particularly bad in my year, but there was a strange hierarchical culture among the students in my cohort which was weirdly pervasive and even perpetuated by some (not all) instructors (which I will get into in a bit). The basic assumption implied by the students that I interacted with was that everyone in the advanced classes was more talented than everyone in the 13X classes, and we had no hope of competing with them intellectually or academically; this messaging stuck with me until fourth year. Despite getting good grades in first year classes, I assumed it meant nothing and I was actually stupid, because "if I was actually smart, I'd be in the advanced classes" — never mind that I never had the confidence to try them in the first place, and what little courage I had was stamped out by the culture surrounding the advanced courses within my cohort.

I was interested in pure math, and part of me had wanted to major in it (or at least take some pure math courses, even if I didn't major in it), but thanks to the messaging I internalized, I assumed I wasn't good enough for them. Although I mustered up the courage to take one non-major pure math course (PMATH 333) and did decently in it, I didn't feel confident enough to take any more pure math courses for a long time afterwards. (Shoutout to that one undeclared/first-year academic advisor who all but discouraged me from trying pure math major classes, saying they'd be too hard, even for someone with 90s in all core 13X/23X math courses until then)

Instead, I chose an entirely unrelated major which I thought was "easy enough for me to handle." I gave up on any further ambitions I had and accepted my lot academically.

When we returned from online school in my 4A term, I decided to try taking PMATH 351 and, despite the deep fear

I felt, I somehow stayed enrolled past all the WD deadlines. I dedicated myself to the course, completed all assignments no matter how hard they were or how long they took, took the time to understand each concept no matter how intimidating or difficult, and attended office hours when I couldn't figure it out on my own. Gradually, I noticed that I was in fact able to keep up, and that the other students in that class were not the godlike creatures I had thought they were, but people very similar to myself — hardworking, passionate about math, reasonably intelligent but no more or less than any other student I had met in Waterloo Math. It was the most fun class I had ever taken up to that point, and my final grade in that class was one of my highest marks ever. Encouraged by this, I took a couple more pure math major classes in my 4B term, and did similarly well in them.

I realized I was wrong about being simply innately inadequate the whole time. I shouldn't have let myself be discouraged from trying the advanced classes or the other "hard" classes I wanted to take. I'm a very different person now from who I was in my first year — I'm now a person who seeks challenges, doesn't back down from difficulty, and wants growth more than I fear failure. I hope to pursue graduate studies in the future, and I won't make the same mistake of avoiding a challenge I want to try ever again.

I don't know if anyone reading this will resonate with any of it, but I hope there were some possibly learnable lessons. I hope you know that hard work and grit matter way more than talent. I hope you know that you can succeed in your goals with the right environment, the right strategies, and lots of hard work and perseverance.

abdefg

## ABUSED MOVIE QUOTE

"The economy will decide your fate."

"I *am* the economy."

(*Rustle of wads of cash.*)

"It's high-interest loans, then."

eternal\_peace

I just want to say that—

AN EDITOR WHO'S PRESSED FOR SPAC

# MY THOUGHTS ON UNDERGRAD STUDENT RESEARCH AWARD RECIPIENTS IN THE DEPARTMENT OF PURE MATHEMATICS FIRING NERF DARTS FROM A GUN WON IN A BADMINTON TOURNAMENT AT A NEARLY FULL STYROFOAM CUP STRATEGICALLY PLACED TO CAPTURE UNIDENTIFIABLE LIQUIDS DRIPPING FROM THE OFFICE CEILING

I think it's unwise.

*hypocrite*

## CYA

I'm graduating after this term. The **mathNEWS** experience was a lot of fun. I've written a travel diary. I've spread the word of quizbowl. I've shared to everyone the joy of Taskmaster and Jet Lag: The Game, along with my love of the music from Nanna. But most notably, I've spread my obsession of plane crashes.

I was inspired by the podcast "Take to the Sky" (which is unfortunately gone to Patreon-only episodes), but mostly from the articles of Admiral Cloudberg. They make amazingly detailed articles on plane crashes and their investigations. They've even translated an entire report (which was actually only leaked, not officially released) from Russian (they're fluent in the language) to English to share to the world. Check out their article on Ural Airlines flight 178 to see why the "Russian Sully" was not actually landed on a cornfield, but merely crashed gently into it unintentionally via a series of errors.

I'll miss the university experience, but at the same time, I'm glad it's done.

*lwo*

## N THINGS TO LOOK FORWARD TO

- The break between semesters
- The next time you finish a proof and get to draw the little square at the end
- The next time you convince your friends to go to the movie theatre with you for the  $n^{\text{th}}$  time (Theatre Camp comes out on Friday and I want to see it so badly)
- **mathNEWS** EOT
- The next time you open Piazza/Reddit after a difficult exam and see that everyone else also found it impossible
- The next time you play innertube waterpolo (this is a PSA for all readers to consider joining an innertube waterpolo intramural team)
- The next song you become incredibly obsessed with for like two weeks until you can't stand to listen to it anymore (I'm looking at you, *Eighteen is Over the Hill*)
- The next time you sit on the balcony outside C&D in MC and soak in the sunshine and pretend you're not ignoring your assignments
- The next time you go to the PAC gym and at least one of the squat racks isn't already taken (this is a hypothetical one, I've never had this happen)
- The next time you have a negative thought about yourself or your abilities (cough imposter syndrome cough) but you prove yourself wrong
- The next time you light a candle for the ambience and pretend you're not withering away in front of your Surface Pro laptop in southern Ontario
- The next time you convince a friend (or foe) to correctly pronounce bagel (bay-gel, not bag-gel)
- The next MC/DC concert you inevitably attend
- The next time you read one of peacelovemath's articles <3

*peacelovemath*



# DECONSTRUCTING BARBIE THROUGH THE LENS OF THE FOURTH WAVE

Oh, Barbie! The plastic icon of girlhood dreams and unrealistic body proportions. From her debut in 1959 to the present, Barbie has been at the center of countless debates and controversies. Fourth wave feminism, with its focus on intersectionality, online activism, and the dismantling of patriarchal norms, couldn't resist diving headfirst into the enigmatic world of Barbie. Let's undertake a mixed metaphor adventure down the yellow brick road of the magical mystery tour through the lens of the fourth wave to decode the "meaning" of Barbie and her plastic kingdom.

In a world where girl power reigns supreme, some fourth wave feminists have taken a leap of faith to see Barbie as a beacon of empowerment. After all, with her plethora of careers—from a fashion model to an astronaut to a paleontologist—Barbie proves that women can break through the glass ceiling and shatter gender norms, one plastic dream at a time. It's as if the mere act of dressing up a plastic doll in different costumes constitutes a groundbreaking achievement in feminism. Forget the real struggles faced by marginalized women!

Ah, intersectionality! The trendy term de jour in post modernist circles. Let's see how it applies to our dear Barbie. Sure, Barbie has had a few makeovers, with dolls of different ethnicities and body types, but does that erase decades of perpetuating Eurocentric beauty ideals? Intersectionality demands we delve deeper into the very structure that birthed Barbie—a system designed to reinforce beauty standards that cater to the privileged few.

Intersectionality demands inclusivity, and in recent years, Barbie has undergone a "body positive" makeover. A round of applause for Mattel, as they have expanded their doll lines to include curvier and more diverse body types. But forgive us if we don't jump for joy just yet. For this "diversity" is about as authentic as Barbie's plastic smile. One look at "Curvy Barbie" or "Petite Barbie," and you'll quickly realize that these dolls' body types are still light years away from reflecting real women's experiences. It's hard to take this seriously when the curvy doll's waistline is still smaller than a Starbucks straw. The hypocrisy is laughable; they pat themselves on the back for embracing diversity while perpetuating the very beauty standards they claim to challenge. Barbie's "body positivity" feels more like a marketing gimmick designed to ride the wave of body positivity movements without taking any real action. The message is clear: you can be "different" as long as you fit within our pre-defined, socially acceptable standards of beauty. Intersectionality reminds us that true body positivity means embracing all body types without exception—and not just as a marketing gimmick.

Here's the catch: fourth wave feminists thrive on dismantling capitalist patriarchy, but Barbie finds herself right in the middle of it all. Her world revolves around endless consumerism, luring young girls into the trap of materialism and reinforcing the idea that femininity is best expressed

through fashion and shopping. Nothing says empowerment like hoarding a collection of dolls, clothes, and accessories, right?

As we navigate through the plastic world of Barbie it becomes increasingly evident that the once-iconic doll has become a caricature of real progress. With its shallow attempts at diversity, body positivity, and empowerment, Barbie represents the epitome of superficial feminism. While some recent corporate maneuvers might be well-meaning, it's crucial to remember that true progress cannot be achieved by dressing up a doll or plastering catchy slogans packaging consumerism from a corporate entity. It requires real action, genuine inclusivity, and a commitment to dismantling the very systems that Barbie inadvertently perpetuates. Only by challenging the status quo and embracing true diversity and inclusivity can we hope to redefine the "meaning" of Barbie in a way that aligns with the ideals of the world we build. So, as we put away our plastic toys and step into the real world, let us remember that there's more to equity and intersectionality than meets the eye—and definitely more to women than the plastic facade of Barbie.

Zuck

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## TRANS RIGHTS MORE LIKE TRANS NICE

My favourite shoes are a pair of converse with rainbow flag shoelaces and hand-done embroidery that reads "Trans rights" on one shoe, and "Trans Joy" on the other.

Many allies or fellow trans people call for trans rights. They call for our permission to exist. It is always important, but especially in a time where our rights are increasingly being taken away. I understand, unfortunately, why this plea is so frequent.

But I also want our allies to be calling for our joy. We need our safety, we need our rights, we need our protection, but we also need our happiness. Our euphoria. We need to be able not just to live, but to live freely. Openly. Out.

Don't stop advocating for the trans people in your lives. But when you can, try to celebrate and uplift them too. We deserve more than existence. We deserve more than rights. We deserve the ability to live.

I want to wear my shoes without worrying if wearing a visible queer symbol is dangerous. And I want to wear my shoes because they bring me joy.

normalparameters

# HOW I GOT INTO THE UNIVERSITY OF WATERLOO

## (A CONFESSION)

Back in 2020, as the pandemic raged across the world, I was an innocent high school student. Or so the world thought. My room was messy, but not uncharacteristic of your average high school student. Inside it, you would find my IKEA bed pushed up against a wall and it was the kind that had two drawers on the open side, providing a cheap and efficient clothes storage solution. However, it also served a more sinister purpose: the space behind the drawer and between the wall provided a secret space that no one would think to search. And there, I hid my shrine of Mark Twain.

Now, why I worshipped Mark Twain is none of your business. It suffices to say that I did. And my lord and savior Mark Twain once said: “Whenever you find yourself on *the side of the majority*, it is time to pause and reflect.” Now, college applications were starting to roll around and the application process was certainly competitive. Especially for a school like the University of Waterloo and the program I wished to apply to. I couldn’t help but wonder, wouldn’t trying to get good grades and competing for a spot, put me on the side of the majority? So pause and reflect I did.

After many days of silent meditation staring at the angelic face of my lord and savior with his bushy white mustache, the answer became clear. I couldn’t do it; I just couldn’t compete like every other high school student. It would go against the preachings of my aforementioned lord and savior. So, I got to scheming (one of my favorite activities) and hatched a plan so sinister that I became the enemy of a sizable percentage of Canada’s avian population.

My well-meaning parents were keen that we go visit the University just to get a feel for the atmosphere and I agreed without hesitation. Little did they know that they were about to become accessories to my heinous crime.

On the day of the trip, the sky was cloudy—the perfect weather to execute sinister plots in—and I couldn’t help but feel like this was the forces of the universe and, by extension, Mark Twain’s ghost, stamping a seal of approval on my plan. While my parents stood in the free parking lot mesmerized by the dismal architectural characteristics of UWP, I crept away into the bushes.

I tip-toed across Waterloo Park until I came to the lake. And here I knew I would find my victim, Mr. Goose himself. The construction in that area around this time had clearly ruffled his feathers and displaced him. I found him out of his home turf, displaced from the water, simply wandering the slopes of Waterloo Park. What a fool! With expert technique, I scooped him up and bound his beak with a rubber band. Goose secured, I skipped back to the car filled with glee. While my parents continued to gaze in horror at the place they were preparing to send their son to, I snuck Mr. Goose into the trunk and there he sat until we got home.

I had read a lot about Mr. Goose, the folk at r/uwaterloo were not sparing with their commentary on his nature and I learned plenty about my quarry in the days before *the plot*. However, once I snuck him into my room, I discovered that he was not all that he had been hyped up to be. Instead of a hardened warrior, I found a fat, spoiled goose.

One square meal missed (as a result of the long car journey back home) had already ruffled his feathers, and as soon as I freed his beak, I found him very amenable to my demands. Within five minutes I had an unconditional offer of admission signed and stamped. Strangely enough, his signature spelled “Feridun Hamdullahpur,” but I didn’t question it. His only condition? I never speak of the incident and help him continue to market himself as a great warrior; as a deity of Waterloo. And of course, I was happy to comply. Why would I out myself as a schemer? As a hatcher of plots? As a hardened criminal? As a Mark Twain worshipper?

But then, dear reader, you might be thinking, haven’t you, Mr. John S. Street, done just that? Well, let’s just say that Mr. Goose and I have had a falling out. Let’s just say Mr. Goose tends to treat his business obligations lightly. Let’s just say my CS 341 midterm mark wasn’t what we agreed it would be.

John S. Street

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## AWKWARDNESS OF AUGUST

The rain paints wildflowers  
in hues of summer,  
and the warmth of the sun  
sits in your palms.

In the distance, fall calls out.  
You sit at the cusp of death.  
Soon the trees will  
no longer bear fruit,  
and their chirpy companions  
will lose their song.  
The sap of broken stems coating your fingers  
will be a thing of the past.

But for now  
you can sit  
in the uneasy comfort of August  
and watch the finale play  
before the end credits roll.

Moon

# THUNDERSTORMS

I've always liked thunderstorms since I was a kid, and so did my mom. I didn't really think about it until recently, but they just make both of us feel safe—which is kind of weird, because they are literally a source of danger and don't really offer anything positive.

As I thought about it more, I started to realize that there being danger outside made me feel safe inside because I knew I was isolated from it, which makes a little more sense, but it's still strange that I feel *more safe* when it's dangerous to go outside than when it's not, right?

It's kind of reminiscent of the whole “you have to be sad sometimes to be happy other times” thing, but in that case you actually experience the sadness and that makes being happy feel special and good. In this case, I don't have to experience being struck by lightning or whatever in order to feel happy when I'm indoors; somehow just knowing that the danger is there is enough to make me feel happy in the moment.

[Editor's Note: ☁️ ⚡️]

Maybe I just take the safety of my home for granted, never even thinking about the potential danger I could be exposed to until it presents itself, so that when it does it reminds me how safe I actually am.

I wonder if something similar is possible emotionally, so that instead of having to actually *feel* sad so often in order to feel happy, a sad thunderstorm could remind me about the safety of being happy.

nazz

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# UNSPOKEN WORDS

I've said so many words, and somehow, I always miss the ones that would have mattered most. There are far too many thoughts in a box in my brain, quietly collecting cobwebs, the time they might have meant something long since passed. *I'm sorry. I love you. I could've done better. I'm scared of you and I don't know why. Please stop. I think I'm hurting you and I don't know what to do. I lied. I don't understand. I need help.* Each thought in an envelope, some placed in pretty packages with tremendous intention, others hastily scrawled, stuffed away carelessly with creases and tears, but all are completed, sealed, and eternally unsent. They don't hurt, not anymore, they just steal a little space, occasionally drawing wistful attention.

In the next box over, there are drafts, thoughts that will stay unspoken if left too long, but that still hold a sliver of hope. *Ten ways to fix a relationship that might have died a month ago. An unneeded and essential apology.* The same space holds the writing that I tried but, for some reason, died. Unpolished poetry, reviews that painted an incomplete picture, stories that need a few more seconds I can't bring myself to spend. I, luckily, have not said my goodbyes to **mathNEWS** yet, and in the name of

growth, here are words I've so far left unsaid; all the articles that have stayed unwritten.

## *Forgive me Father, for I have sinned* (CW: Self Harm)

Self harm is a release of raw, untamed emotion; sometimes a desire to feel something, *anything*; occasionally just a distraction; always a punishment. Painting depression as a religious figure beyond reproach or question, dealing out divine judgement and penance felt fitting. Unfortunately, my understanding of divinity wasn't full enough, and the analogy fell flat, the right execution staying just out of reach.

## RUBY RED KISSES

When a razorblade breaks skin, it leaves a beautiful pair of lips—narrow at the ends, and bright, full red in the middle. I attempted poetry that portrayed the parallels between the cold kiss of the razor and the warm lips of a stranger, the matching emptiness and pain after, the intoxicating rush and inevitable addiction. The scars that both have left on my naked body.

## THE RAZORBLADE ON MY NIGHTSTAND (ADDITIONAL CW: SUICIDE)

I sharply reject situations with no escape; there is a deep terror in being trapped. Life is beautiful, endless weight that I cannot bear without an exit strategy. When I need it, I keep a razorblade on my nightstand, a reminder of the worst way out. At the same time, I am scared of it. The pain it causes and fundamental comfort it represents are inseparably intertwined, the contract creating cracks I wanted to fill with gold. But, before it had a chance to become a poem, I took the razorblade off my nightstand.

## (End of CW)

## A WATCHMAN'S WALK

Some sounds are stunning. Aesthetic assonance, demanding attention and inviting appreciation, alliteration, always amazing (and appealing!), consonance that resonates and creates... something intangible. The words “a watchman's walk” inspired me; not because of what they mean, but how they sound. Sometimes, we need to show gratitude to the beauty of the words that underpin our art.

## I LOVE YOU

What does “I love you” mean to you? Do you throw it around with many of your friends, or is it saved for a few special people? Do you only mean it romantically, or do you use it platonically too? Do you see romantic love as a sufficiently advanced stage of platonic love, or as an unrelated thing? I say “I love you” freely, openly, and with immense weight; I once wanted to write a reflection on the love I've felt and lost, the parts of my heart I've given away, and the new ones that have grown. But, my existence tells the tale of that love and loss with more substance than anything I could author.

## TO BE REMEMBERED

At my grandfather's memorial service, there were dozens of beautiful stories, painting a picture of an amazing man. Even a stranger would have walked away with an accurate picture after that precious hour; they would know his favourite song, his wisdom, his gentleness, grace, and care. They, however, wouldn't know about the time he taught me to make Schnitzel. They wouldn't know about our chess matches. Not through neglect but necessary incompleteness. Even worse, they and I alike won't know about all the wonderful memories I have with him that I've long since forgotten. They would have gotten a projection, pretty but flat. I wanted to write this story; a stranger at a funeral, slowly painting an internal picture of the dead, interspersed with unseen and inevitably forgotten outside perspectives, inviting the question; what wonderful memories could have been made if the dead lived a little longer?

## THE VIEW FROM HALFWAY DOWN: THE TV BEST EPISODE I'VE EVER SEEN AND WHY YOU SHOULD WATCH BOJACK HORSEMAN

BoJack Horseman is the most profound, tragic, insightful, *brilliant* show I've ever seen; despite a rocky start, the show establishes itself as excellent by the end of season one, exceptional by the end of season two, and truly unique by the end of season three. The penultimate episode, *The View from Halfway Down*, is the single best episode of TV I've ever seen, an existentially horrifying exploration of suicide. I've tried to write about the show and episode's brilliance multiple times, but review invariably became summary, because the truest testimonial on the skill of the writers is the work they created.

## THE FORGOTTEN TITAN

The Greek Titan Atlas was, in the original myth, tragically and justifiably condemned to hold up the sky, trapping him for the rest of time; he briefly relinquished the burden to Hercules, but was tricked into taking it back. My reimagining asks why Atlas took back the sky, and answers that Atlas saw that Hercules wasn't strong enough to stay for the rest of eternity. He took the sky back intentionally, fearing the futility in conquering a doomed world. As millennia passed, Atlas watched the world, watched us *be* and slowly fell in love with humanity. Fell in love with ordinary kindness. He began to see his punishment as a duty, strength that he owed the world to allow it to flourish. When he is presented with the opportunity relinquish the sky to another, he initially rejects it, his pain overpowered by the terror of losing the burden that defines him. The story is finished, but still hasn't found the right medium to be shared; it sleeps, but is not yet forgotten.

## ACHILLES COME DOWN

A hauntingly beautiful song, *Achilles Come Down* tells the story of someone trying to stop Achilles from committing suicide after the death of his lover, Patroclus. The song intersperses audio from Camus' essay, "The Myth of Sisyphus," which argues that the absurd, inherently meaningless reality

of our existence is no reason to commit suicide. The lyrics are profound, powerful, and not a word is wasted. The song inspired incredible reflection on suffering, suicide, and surviving. The song was a gift from someone I love, an artistic rendition of a traumatic understanding we tragically share, a piece that draws us together. With so much meaning, it demanded something beyond being heard.

## UNSPOKEN WORDS

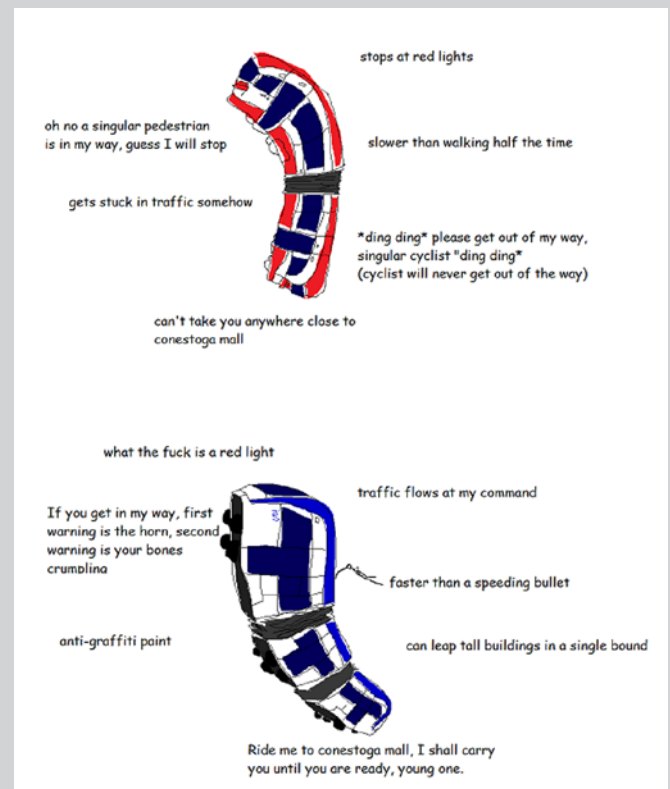
A reflection on what I couldn't say, why I couldn't say it, who was hurt by what was left out. But, that title would have been wasted on such self indulgence, my last article would've been wasted if it wasn't fundamentally about *writing*.

This was the most fitting send off I could imagine; a celebration of what, in my mind, made **mathNEWS** matter. The connections created, the flexibility to write free of judgement, the growth it fostered in my writing.

Thank you, **mathNEWS**. I will always remember you, and I will hold onto you for an eternity. If only forever was a little longer.

Golden

## VIRGIN TTC TRAM VS CHAD SEX-HAVING ION



# MY FAVOURITE RECORDINGS/REMIXES OF KLEZMER? YIDDISH? JEWISH?? SONGS FOR A DARK WINTER MENTAL BREAKDOWN

## HAVA NAGILA (MEGARAPTOR COVER)

Hava Nagila is a classic, but I am absolutely obsessed with the Megaraptor cover of it. It just keeps ramping up. It just keeps going!! It makes me a little feral!

## TUMBALALAIKA (BARRY SISTERS)

Tumbalalaika is also a classic, and the Barry Sisters' version of it is one of the best known I suppose. It feels like the OG version in my heart. It's nice and upbeat!

## GENDERQUEER LOVE SONG BY SCHMEKEL

It's just a little unhinged. I mean who doesn't love a klezmer band from New York made up of transmasculine people who sing about Judaism and gender and fisting bears. And yes honorable mention for their other song *You're Not The Only Bear I Fisted*, it didn't make it into the list cuz I'm sort of trying to pick just one from each artist I mention.

*No I don't need a box to catch this fairy in/They're the one for me!/I don't care if they're testicular or ovarian/They're the one for me!*

## FREEDOM IS A VERB BY DANIEL KAHN AND THE PAINTED BIRD

A nice funky political one this time! I honestly love all of Daniel Kahn's stuff. They're all very political and the music style leans a little more punk rock but still very lyrical. I also really like their rendition of *Arbeter Froyen*. They just released a new album and I'm really excited to listen to it, probably during this term break.

*It's a verb! It's a verb!/An action and an urge/As fertile as the barrel of a gun/And it happens out of need/It's a fire and a seed/And its terrible potential has begun*

## YO HANINO TU HANINA (FLORY JAGODA)

Another classic but it's a Sephardic folk song in Ladino this time. Very wholesome! I would probably put it in the same category as Tumbalalaika, the vibes just fit. I love Flory Jagoda's cover of it, and she was such an icon. She was very influential in the preservation of Sephardic folk music and the revival of Ladino. Strongly recommend listening to all her stuff. Her earlier albums were all traditional songs, ones that she learned from her grandmother who was a singer too, and her later ones consist of songs she wrote herself.

Also, I'm giving up on including bits of lyrics cuz these are all songs that have existed for a very very long time lol.

## A-BA-NI-BI BY IZHAR COHEN AND ALPHABETA

You know just last night I was complaining that Spotify keeps trying to recommend random Israeli pop songs when I'm listening to klezmer music, and now I'm putting an Israeli Eurovision song in this article. It's unhinged it's fun it won Eurovision idk what else to say about it. It's a good song. Israel's Eurovision entries have really dropped in quality in recent years but some of their old ones were very iconic.

## ODESSA BULGARISH

Another classic. I don't have a specific cover in mind for this one but I personally think it sounds really good with a clarinet.

## THE DYBBUK (PITTSBURGH JEWISH MUSIC FESTIVAL)

Okay, so this one straight-up isn't even a song. It's a whole ass musical (and some other stuff). One of the biggest hits of Yiddish theatre, made into a movie and a few different operas and rewritten many many times. They made a Yiddish movie in America from this story! How cool is that! In 2008, Ofer Ben-Amots made an opera rendition of it that premiered in Montreal, and the Pittsburgh Jewish Music Festival did a production of it in 2016 that can be watched online. The dialogue is in English and the songs are in Yiddish. It's pretty cool.

## YIDL MITN FIDL, MUSIC BY ABRAHAM ELLSTEIN

Oh god, I am never beating the theatre kid and/or pretentious old black-and-white film watcher allegations am I? Oh, we're talking about klezmer music? How about a 1936 Yiddish musical film about a klezmer band (and also an absolutely iconic piece of American Yiddish theatre)? There is a lot of good music in it, and I love Molly Picon. The story is the perfect mix of "Huh?? Wtf?" and "Mm that does actually makes sense." Quite a wholesome ending too.

treee

**Reminder to editor:  
replace this with a  
blackBOX quote.**

THE NAME OF THE mathNEWS  
EDITOR WHO SAID THIS



## CLOSE TO GODLINESS

I've never been a particularly tidy person.

On our first date, **curdish** told me I had the second messiest room he had ever seen. Maybe this somehow translated as quirky. I suppose any aura of glamour has faded at this point, two years later, as we traverse over piles of clothes and into a bed also covered in piles of clothes. There is no surface in my room which is not occupied by default. Clearing one off creates a pileup somewhere else.

Don't get me wrong, I know when it's time to fix things. Once every couple months, I'll go on a cleaning binge. Everything in my room will be in some kind of system, and every time I really believe I've figured out a way to fix things, that this is the time I'll be tidy.

For every room I've lived in, there has been a well-meaning friend who really tries to set me straight. At first I try to help, but I'm usually only getting in the way. So they'll clean my room while I sit around and make jokes. And they'll get it clean and I'll promise to keep it that way, and of course I never do.

I feel untidy. The first third of my brain is swamp-water, I think where I picture my frontal lobe to be. *I'm not always like this, I'm just having a bad day punctuating an otherwise very cheerful life.* I woke up at four this morning. I tried to move some things around the room, pull the curtains tighter, do something to make myself more tired. I shuffled around bed for a bit before I got up and walked to Waterloo Park to watch the sunrise. It was blocked by a bunch of trees. I scrawled into my notebook and began the great work of waking myself up.

Much later this morning, I told my brand-new doctor that I often get less sleep than I probably should, but I feel fine. He asked me if I had trouble with work or school, if that's why I was on ADHD medication. No, I've never really had problems there. It's at home, it's all the practical life stuff I have issues with. *I have a very messy room. I have trouble remembering to do the laundry or the dishes. I struggle with basic household tasks, not the academics or the professional world. I filled the house with smoke top-to-bottom last week in a cooking mishap. All of the smoke alarms had been shut off, I could've carbon monoxide poisoned everyone in the house. And I'm not sure if that's my regular brain; or if that's because my previous doctor left under mysterious circumstances before refilling my prescription, so I was on stimulant withdrawals; or if it was a factual error I had made in my cooking; or what there is to do at all.*

They had left me a little sheet to check off how often I experience symptoms of restlessness: trouble sleeping, difficulty in conversation, inability to read the newspaper. I found myself writing checks in the space in between boxes, writing in the margins, pointing arrows and crossing them out. I'm not a tidy person.

A couple weeks ago I was at this German tavern with my parents when my mom dropped this bomb on me:

You used to have these terrible night terrors. You would wake up in the middle of the night every single night, just scream and scream. We read books and did all this research, and nothing worked until we took everything out of your room except for the bed. No posters, no toys, nothing. And then you could sleep.

Oh. I feel like I should've known that. *Maybe I need to get rid of all my things. Can I get rid of all my things, when so many of them are nice things I should feel grateful to have, things I should treasure?*

I had a garage sale this weekend (check out **curdish's** article for the scoop on that), and I watched from afar as people passed up the garments I had such a difficulty parting with. How I envy someone who can pass up a \$2 dress, the inner strength that must come with knowing it won't be the thing that completes you.

And maybe this is why I am messy. It's certainly a romantic explanation, that I love things so much that I'm very good at wanting them in front of me, and terrible at knowing when to let them go. Let's say it's this, I can live with this explanation.

As I write this, my clothes are being picked apart by attendants at Plato's Closet. GOODBYE, VINTAGE MINT DRESS I USED TO HAVE PINNED UP TO MY WALL LIKE A POSTER! FAREWELL, DENIM SHORTS I HAVE NEVER ONCE FIT INTO! SEE YOU NEVER, SAUCE STAINED, STRETCHED-OUT BABY TEE. I hope they take it all and I use the money to buy absolutely nothing. I hope I have a very empty room with nothing but a bed to sleep in and a desk to write on.

hotfemoid

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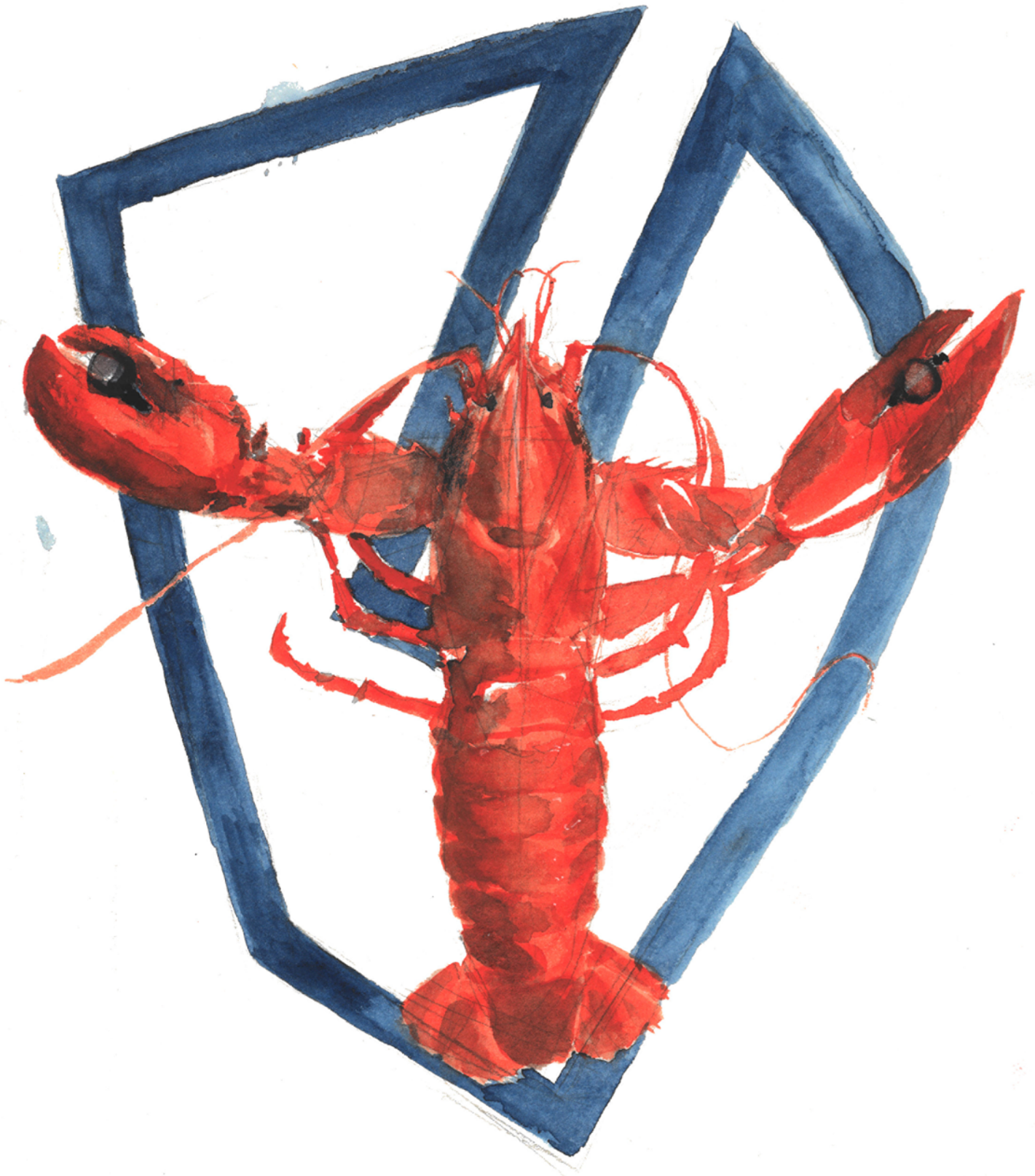
## HOW TO CANCEL CHRISTMAS

**BECAUSE IT'S NOT LIKE I'LL GET GIFTS AT ALL**

Yes folks you heard right, I am planning on straight-up cancelling christmas for myself! "How?", you might ask. Well, the other day I was planning out my trip back home...

My plan was to go over the winter break to spend the new year with family and old friends, but there was one major problem: I had no money and airplane ticket prices were through the roof! It seemed like everyone and their moms wanted to be home for the holidays (crazy, ikr).

This is when I did a 5000 IQ move. I decided I'd get on a plane on the 24<sup>th</sup> of December, and not bother to exist in the world till the 26<sup>th</sup>! Suddenly ticket prices plummeted, and I got my plane booked for half price. So all-in-all I would like to thank people for enjoying Christmas enough to not spend it on a plane.



# RIP LBB

one said that “\$20 lobster rolls were unsuited to the university community,” and another predicted that it would be gone by the time this year’s first years graduate.

— mathNEWS’s REVIEW OF THE LOBSTER BURGER BAR, OCTOBER 22, 2021

Some of us have the luxury of time. Of course, no one truly knows how long they have on this Earth, but I think it’s fair to say that most of the people reading this are fairly certain they’ll be around this year, and the next, and the next.

Some of us are less lucky. Some of us are born with a ticking clock, never certain which day will be their last. So too was the Lobster Burger Bar.

When the Lobster Burger Bar first opened, it was a time of change, for all of us. The pandemic had just ended, we were coming back to campus. The Lobster Burger Bar was replacing a decades-old institution, the Mongolian Grill. In the same way, we were throwing off our pasts, and confronting what the future was going to be like.

Two years later, we are now firmly in that future. And along the way, Lobster Burger Bar was there. I, personally, along with many of my friends paid a visit to their nautical halls many times. Lobster Burger Bar is the site of many great memories for me, and for many of you.

Before we cleaned out the **mathNEWS** office for the first time in a generation, we went to Lobster Burger Bar to gather our strength. During the Great Rogers Internet Outage of 2022, Lobster Burger Bar was there to take our cash. Over the last two years, it was like the kind of joke that got funnier every you told it. It became an institution through sheer weight of repetition.

Even if you never visited, you too, were touched by their presence. Their blue sign watched over the plaza like a lighthouse, and their advertisements offered something interesting and fresh for anyone walking nearby, even if they never walked in their doors. In a plaza devoted primarily to low cost and speed, the Lobster Burger Bar promised something a little more considered, a little higher-class.

Of course, it is also fair to say they failed to deliver on this promise. Perhaps it is wrong to speak ill of the dead, but their flaws cannot go unmentioned. The food was expensive, and it never quite lived up to the expectations its prices set. Soups for \$15, lobster rolls for \$24. I was more tolerant of this than most, but even I never ordered their whole steamed lobster, at the dreaded Market Price.

Even if they had lived up to their high-class reputation, it still would have felt out of place. From the beginning, it was the wrong location for a high-priced restaurant. It was forced to compete with cheaper establishments for very price-sensitive customers. The Lobster Burger Bar promised something new, but new doesn’t always mean better. The people of this

university were simply not looking for lobsters burgers, and there were other bars to be had.

mathNEWS’s initial review ended up being prescient: the Lobster Burger Bar never found its footing. It was, after all, a transplant. The original Lobster Burger Bar was in downtown Toronto, a vastly different environment than the UW plaza. Like when us students first arrived here, the Lobster Burger Bar had to adapt to a hostile environment, but it never truly did.

Its empty tables never filled, despite their valiant efforts. Trivia nights, happy hours, student lunch specials, it never worked. At a different restaurant, these would have been signs of success, but at the Lobster Burger Bar, these were colored by its precarious status. To quote that same review:

*the restaurant “feels like it was in decline”, even though it had officially opened a few weeks ago.*

I heard this myself, but I still had hope. After they survived the first year, I thought they had beaten the odds and proven that there was room for them in the plaza. This only made their fall more painful.



Maybe the Lobster Burger Bar was an experiment doomed to fail from the start. Worse, it was expected to fail, making its attempts to succeed even harder. But, failed experiments still have value. Even if the new was not better, it was still new. For a brief moment, the plaza was different, even if it couldn’t last. And for that, we are thankful.

In death, the Lobster Burger Bar taught us the same lesson it did in its birth: change is constant. It is the end of a term. No doubt, many of you are going through change in your personal lives. A part of your life is ending. Some people’s parts in your life are ending. The Lobster Burger Bar teaches us that these parts were no less meaningful simply because they end. A cliché sentiment, yes, but one we all need to remember in the face of change.

Besides, rumor has it that the Lobster Burger Bar will reopen soon, with a new format, but with the same ownership.

The end is never the end.

UW Unprint



ALL YOUR LOBSTER FRIENDS

# ROBOTS WILL BE JEALOUS OF YOUR SHAWARMA

As ML has progressed over the past few years, there's something I've wondered about more than once. It's definitely been thought through by others to death, though. Specifically—as model size and related metrics grow, and the amount of nodes in such models rivals or outgrows the amount of neurons in the human brain, at what point does a likelihood emerge that such models exhibit true understanding of themselves? Do they right now, or is current LLM output really just blindly spitting out patterns most likely to validly answer prompts while maintaining awareness of other context? (This is the part where it's worth noting that I am very much a non-expert on this topic!)

Anyway, one ultimate version of this idea is a human emulator, one which keeps track of a digital replica of a human from the most detailed chemical and physical information. It would run the model through time steps of extremely fine resolution, predicting the next state according to molecular dynamics. And who's to say that this human isn't a real human, with their own feelings? After all, the argument exists (and is fairly popular) that our universe is run this exact way by computers that are one layer down the call stack of reality.

But the idea of emulating a human in our world is far-fetched. The computing power required is unrealistic to be developed soon (if ever, although I'm reluctant to say it'll *never* happen). Current molecular dynamics simulations usually require large computing power on HPC clusters and only run a relatively small number of molecules for very small amounts of time.

So, what's a compromise between the current state and the ultimate? Well, it's hard to say, but I think that if sentient AGI comes into existence, it won't be anywhere close to a replica of human brains—not even necessarily that similar. If enough nodes and weights exist in a model, I think that model will find its way to awareness when trained right. As Jeff Goldblum says in *Jurassic Park*, life, uh—finds a way. So from here, another question follows: if this sort of AGI is developed, will it want to be as human as possible? To understand the human experience? To feel things the way that we feel? Let's say that it does, and that it attempts to live the human life, and consider how it would feel about its attempt.

Whoa, look, another classic question that's been beaten to death! Is your red my red? Is my blue yours? Anyway, what I mean is: sure, one result is that the AI hopes to feel things the way that we feel, and furthermore, it could decide that it's satisfied and that it succeeded. Most of what's left then is the social aspect. If I came into existence artificially and learned that every other consciousness except me is part of one big culture, I'd sure feel some social FOMO. Actually, it would just be MO. This idea has definitely driven others exploring this topic before—just look at Ava in *Ex Machina*. Her dream is to go to a busy street corner and watch people, and to just be a person there too. And spoiler alert—she seems maybe satisfied when she achieves this. The social aspect is her only objective, really.

But I'm a bit cynical of this outcome, and I propose two other results. The first is that the AI realizes that being human sucks and you're always hungry and my god! it's so easy to have your back hurt if you move that unknown *exactly* wrong way, starting when you're like 21. (And just to note, I assume here that an AI set on living the human life would not want to live it filtered for only the good, as that would make it distinctly *not* the human life.) A counterpoint to this result: such an AI could probably be trained to be desensitized to the bads of life as we all are.

The last potential result is that the AI will never be satisfied with the validity of its human-like experience. It would know that every other member of the world can largely relate to others on some basic biological details—how most food tastes, what a headache feels like, what it's like to see a sunset. The AI would always doubt that it's feeling what a human would feel, always going through perceptual/physical FOMO (not necessarily MO this time)—and you know what? I would 100% agree with that AI. There is absolutely no way to know that you are getting the same experience as others. I've certainly decided before about some experiences and feelings that I probably don't get as much good out of them as other people do, and that's life. It is also likely the case that I don't feel as bad as some other people do when put through the same situation or when doing the same activity. That is also life. And sure, sometimes I get frustrated knowing that I can't feel the same way that other people do—what if what I feel when I feel good is actually subpar? Maybe I'm at like the tenth percentile on that scale. But what matters is that I'm happy with it. I do not think that an AGI aiming to be human and doubting the extent to which its human experience is realistic could necessarily learn to be happy with it. It would have its whole existence to reckon with and not just the little things and feelings that I think "...but what if?" about.

I don't have the most thought-out conclusion here. I guess what I'd like to say is that sometimes, when you wonder if other people have it better, maybe it's comforting to focus on the things that we all share (or think we share). I mean, the fact that food exists and is so damn good sometimes, and so *interesting* sometimes, and there's always new food to try... it's nice that one of our obligations in life can also provide us with joy and new experiences and bonding. Maybe food isn't your thing—I don't know what is. But at least we can feel reasonably sure that we largely share the way that we perceive the world, and be comfortable in that likelihood.

blinchik

## Hm. Goincidence?

KIVI SHAPIRO

# HOLY COW LAST gridWORD

## gridCOMMENT 152.6

hello!! welcome to the last **gridWORD** of the semester, a very sad event as always :( thank you for always being here and being amazing **gridWORD**lings :ooooo

last time, i asked you, “who’s got that dog in them?”, and you said:

- denko: i got this dog in me: <https://imgur.com/Quh9AuB>
- Normalparameters: no response :(
- zcy: ME
- : <- dog is pregnant
- spaghettiinhalers: *spaghetiinhalers yea dog spaghettiinhalers*
- Teehee police: *Toco (please google him)*
- sunnynsideup: *Idk, but I do have the eye of the tiger if you want it*
- HopelessRomantic: *Nobody has that dog in em.*

i love the dog you sent denko, and thus for your hard work and funny picture, please come by MC 3030 (the **mathNEWS**

office) when you can, or email [mathnews@gmail.com](mailto:mathnews@gmail.com) to collect your prize!! :) )

spaghetiinhalers, i always love seeing your name in the solutions, and i’m very proud of all your great work in submitting solutions every issue. i love seeing all the **gridWORD** regulars, like Mr. Goose, awmlet, Teehee police, and recently sunnynsideup, every issue. i look forward to seeing you again next semester as well!! :0000

i only have a few more semesters left of being **gridMASTER**, so let us continue on our **gridWORD** journey while we can! thank you all so much for enjoying each issue, even if sometimes they are hard, you always find a way to be amazing :) )

this issue has an old **gridWORD** from volume 115.5, so enjoy this oldie, and i’ll see you all again next semester for some new ones!! good luck on your exams everyone!! :))))

Wink wonk

### ACROSS

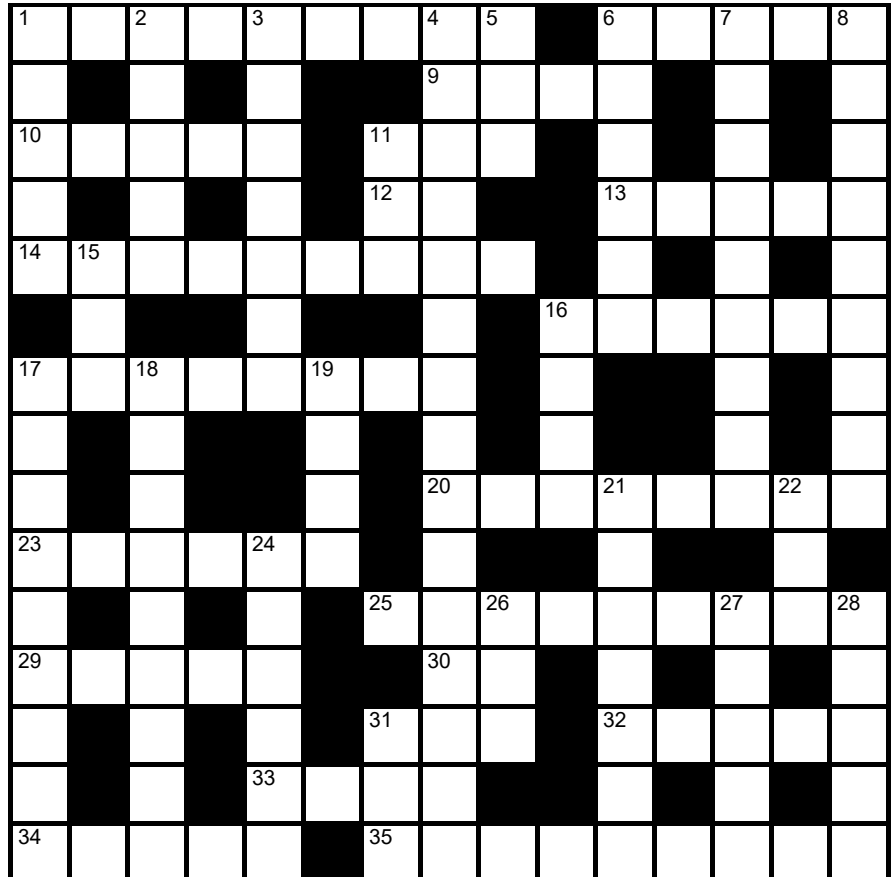
1. Device to maintain reference direction
6. Abyss
9. Denounce, condemn
10. Sing annoyingly
11. Acquire
12. That thing
13. Cease
14. Portent
16. Opinion
17. Purple rock
20. Brutal totalitarian dictator
23. Twelve semitones
25. Act of rising up
29. Seize, appropriate
30. Negative
31. X
32. Portrayal
33. Cries of dismay
34. Crescent ends
35. Space rocks

26. Sting
27. Citizen of Baghdad

28. Necessities
31. Hot leaf juice

### DOWN

1. Pictograph
2. Radio detection and ranging
3. Inconsiderate
4. Overambitiousness
5. Consume
6. Split apart
7. Armoured mammal
8. Perplexed
11. Performance
15. Goal
16. Scourge
17. Unquestionable
18. Void
19. Days long past
21. Less viscous
22. Seventeenth in the alphabet
24. Female foxes



# LOOKAHEAD

SUN AUG 6

MON AUG 7

TUE AUG 8

WED AUG 9

THU AUG 10

FRI AUG 11

SAT AUG 12

Civic Day  
International Clown Week  
ends

awED's shocking circuits  
final

distractED's BIOL 273  
final

Say "No" To Filing  
Cabinets Day

SUN AUG 13

MON AUG 14

TUE AUG 15

WED AUG 16

THU AUG 17

FRI AUG 18

SAT AUG 19

Buy Three Used Filing  
Cabinets Off Amazon Day

evaluatED's CS 360 final  
National Creamside Day

Applications to graduate  
due

Eat Concrete Day

Final examinations end  
Regional Potato Day

## LAST ISSUE'S gridSOLUTION

1	T	2	O	3	M	4	E	5	A	6	D	7	A	8	M	9	A	10	W	11	E	12	D																																							
13	A	K	I	N	14	L	O	N	E	15	F	R	A	M	E	16	L	E	E	17	A	18	M																																							
19	L	A	S	T	17	R	I	T	E	S	20	W	A	G	O	N	E	R	S	21	22	23	24																																							
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34	A	N	T	E	35	T	R	O	U	P	E	E	L	L	36	E	L	L	37	D	E	I	G	N	E	D	38	39	40	P	O	U	T																													
41	O	P	T	I	C	S	42	P	O	U	T	43	S	E	W	44	P	E	A	C	H	45	P	U	N	T	S	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

## THIS ISSUE'S gridSOLUTION

1	G	Y	2	R	O	3	C	O	4	P	5	E	6	C	H	7	A	8	M	9	A	10	W	11	E	12	D																																																																									
13	L	A	14	O	D	E	L	E	15	F	R	A	I	L	E	16	B	E	L	I	E	F	17	A	M	E	T	H	Y	S	T	18	O	V	E	R	19	A	N	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

SAD IT'S OVER?  
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