



“WHO SHOULD THEY HAVE NAMED POPE?”

On May 13th, 2000, Millennium Force opened to the public as the world's first 300-foot full-circuit rollercoaster. As I'm writing this, it's the ride's 25th anniversary. Wonderful things happen in May, don't they? The cherry blossoms are in bloom. The baby geese are waddling along behind their parents. New editors are writing **mastHEADs**.

Being part of the collective editor hivemind really has its perks. I get to exercise my democratic powers at prod nights. I get to dictate when Fridays begin. I get to write the very words you're currently reading. Or don't read them, I'm an editor, but I'm not your mom.

Perhaps I'll even be able to bring a **mathNEWS** issue on a rollercoaster. The way those machines are built is incredible. Swift, silent, anticipation. You're brought to new heights, but there's that mechanical, almost rhythmic, clacking that remains as a constancy. You're further and further from where you started, and bam. The rush of the drop hits, before you're taken on the journey of your lifetime. Wait, am I writing about rollercoasters, or the current state of the job market?

May also means WaterlooWorks season has resumed, but right alongside the anguish of the job search comes a brand-new **mathNEWS** issue. On this fortnightly shortlist we have articles about the meeting the creator of the hyperlink, Italian brainrot, two distinct articles about made-up languages from video games, complaints about Pearson International Airport, complaints about WaterlooWorks, and as always, an incredible sampling of the Waterloo community's creative writing talent. This issue also has an interview with the train man himself, Martin Karsten, and the long-awaited solution to the trolley problem.

This **mastHEAD** would be longer, but my desire to frolic in a field and bask in the sunshine can no longer be contained. I fear I will not be obtaining my CS degree at the end of this term because I can no longer resist the urge to touch grass. Well, off I go to find a patch of grass without goose droppings on it.

Enjoy the warmer weather, and best of luck in your courses, job searching, and in avoiding the geese!

disgracED
Editor, **mathNEWS**

MOLASSES	the Pope. He should be Pope Pope.
LARS NOOTBAAR	2 popes so we can bring back legitimacy crises.
WHOLE NUMBER HAVER	He who shall now be known as Branta Canadensis I
YAMNUSKA	Obama
SNOWDOZER	Northernlion
ABS(JESTER)	Pope Formosus, once again, for a laugh
JOCH	Keanu Reeves
DICK SMITHERS	The girl reading this <3
USMAN!	Simon Wood
NO PUN INDENTED	Chef Boyardee
THE AMERICAN	me
SEXY_SOFTWARE_BABE	me
AAQSR	Definitely not the people who say "me"
ANDOI	The Wikipedia disambiguation page on cardinals
SHWARMA	Jesus
YALEVOYLIAN	Joe Biden
SEASONEDSLACKER	I'd be surprised if nobody said Mr. Goose
APHF	Consolidate religions by making the Dalai Lama pope
ANTSFILE	Some guy literally named Pope
AWED	the mathNEWS editor™
CLASSIFIED	the bust of jerma in the mathNEWS office
DISGRACED	<i>derailed</i> ... too bad he's dead
ABSTRACTED	Blake Madill
BEFUDDLED	I hear Justin Trudeau is looking for work right now

ARTICLE OF THE ISSUE

Congratulations to author $\uparrow \leftarrow \rightarrow \downarrow \rightarrow$'s *Secret Legend* for winning Article of the Issue. I would have written this AOTI blurb in Trunic, but I'm not willing to tempt fate and risk more printing errors. Come pick up your prize, a \$25 Conestoga Mall gift card, in MC 3030.

befuddled
Editor, **mathNEWS**

If you drink the Orbitz, you get every disease at once.

OWEN GALLAGHER, **mathNEWS** EDITOR FOR SPRING 2025
ALONG WITH GRACE FENG, SARA NAYAR, AWAB QURESHI, AND ISABELA SOUZA

mathASKS 158.1

FEATURING PROFESSOR MARTIN KARSTEN

APHF: DOES YOUR EXPERIENCE TEACHING TRAINS MAKE YOU FEEL MORE OR LESS SAFE ON REAL TRAINS?

No change. I love riding trains and feel very safe and relaxed. I believe the numbers bear this out compared to other modes of transportation, but have never checked carefully. Train transportation is clearly the most comfortable way of travelling.

COWMILKSHARPENER: OF THE BIG THREE (GRAPHICS, COMPILERS, TRAINS), WHICH COURSE DO YOU BELIEVE IS THE MOST DIFFICULT?

Trains.

__INIT__: WHAT'S A STRONG OPINION YOU HAVE ABOUT TEACHING?

In computer science, there are very few absolute truths and pretty much everything is a trade-off between conflicting objectives. Beware of teachers that project simplistic certainty! Instead seek to understand the balances and trade-offs.

__INIT__: SUPPOSE THE LENGTH OF A TERM GETS EXTENDED BY A MONTH. WHAT WOULD YOU ADD/CHANGE IN CS 452?

I would probably add more theory around control systems and their realtime characteristics. Given that computers are a lot faster than 40 years ago, but the train control problem has not become more difficult, the software project in the course does not really present any scheduling challenge for computations. However, changing the course to a different control problem, such as cars or drones, would have many other side effects that would fundamentally alter the nature of the course.

MOLASSES: HOW DO YOU GO ABOUT DETERMINING THE ENERGY IMPACTS OF SOFTWARE CHANGES?

For now, we use CPU cycles as a proxy metric until we get better information. Cycles can be tied to CPU frequency, which can be tied to voltage levels and thus energy consumption, so CPU cycles are not a bad metric. However, I believe there is much more to the story that needs to be explored in the near future.

COWMILKSHEPHERD: WHAT ADVICE WOULD YOU GIVE TO ONE OF YOUR STUDENTS TO BEGIN CONTRIBUTING TO THE LINUX KERNEL? WHERE COULD THEY EVEN START?

The most important advice is to find an experienced and well-respected collaborator. The kernel development community communicates via mailing lists and uses very specific rules and conventions to manage volume. I found it extremely daunting to simply show up on the scene and was grateful to have found a collaborator who had experience and had already build a good reputation for themselves. Then of course do not screw it up with fluff and instead try to submit meaningful proposals and contributions!

DERAILED: FAVOURITE TRAIN?

The old European night trains with a full restaurant/bar car had a very distinct atmosphere that seemed similar to very old-school luxury trains. I never travelled on a luxury train and only travelled on night trains a few times, but enjoyed it very much. Unfortunately, modern efficiency and cost constraints have led to the abolishment of these cars on regular night trains.

CHEESEMONGERSPECIALIST: WHAT DO YOU LOOK FOR WHEN SELECTING STUDENTS FOR RESEARCH PROJECTS? WHAT WOULD THE WEIGHTING LOOK LIKE BETWEEN COURSE GRADES, PROJECTS, AND WORK EXPERIENCE?

Everything Everywhere All At Once. Unfortunately I have never been able to develop a good, repeatable methodology.

MOLASSES: WERE YOU AROUND GERMANY FOR THE FALL OF THE BERLIN WALL? WHAT WAS IT LIKE BACK THEN?

Yes, I was finishing high school. It was a time of great excitement and, as young people, we thought the remaining problems in this world would be easy to solve. Little did we know...

LEAH: HOW DO YOU CHEER YOURSELF UP AFTER A SAD DAY?

I try to process what went wrong and otherwise just wait. I'm a naïve optimist, so this usually doesn't take long.

CLASSIFIED: WHAT ARE SOME UNDERRATED MUST-VISIT PLACES IN GERMANY?

Cologne is my favourite city overall for its live-and-let-live attitude. And they have their own, specific type of beer.

Mannheim is extremely underrated. Very rich history and culture. Good times.

The Palatine Forest is Germany's largest contiguous forest. Amazing outdoor opportunities.

Xanten is home to a very unique Roman excavation. Must-see.

CLASSIFIED: WHAT KIND OF TRAIN WOULD YOUR RESEARCH BE?

A long and slow freight train.

mathNEWS

KEIN INFORMATIKSTUDENT: WAS IST IHRE LÖSUNG FÜR DEN WEICHENSTELLERFALL?

Do it!

YALEVOYLIAN: WHAT KIND OF STUDENT WOULD YOU RECOMMEND CS 452 TO?

Nur die Harten kommen in den Garten.

USMAN!: TRAINS; WHY?

Why not?

LIFE HACK

Do you have 8:30 am classes or a long commute to work in your upcoming term? Simply travel to somewhere in Europe or Africa in the time between classes, and then come back and let the magic of jet lag push your sleep schedule back by five to seven hours.¹ Once that's done, just keep cruising in your new time zone for the rest of the term and you'll never complain about not getting enough sleep again!²

the government's only spy

1. Feel free to adjust time zone and travel destination depending on how cooked your circadian rhythm and/or wallet are
2. As I write this article, it's been a little over a week since I came back from my trip and I'm already slipping

MY COMPUTER IS VERBALLY ASSAULTING ME

Title, it's hurting me with these compiler errors

I wanna sleep

PROGRAMMING LANGUAGES TIER LIST

TREMBLE IN AWE OF MY WISDOM

alright: C
good for their use case: R, sh, LISP
on thin ice: Python
uncouth: C#, Java, JavaScript
carbon monoxide poisoning: C++

wacfeld

DONATE BLOOD!

profTHOUGHTS 158.1

A widely cited study claims that giving makes you happy.¹ However, there is a downside and barrier to finding this kind of happiness: giving from one's own limited resources might be a difficult proposition, or, in fact, impossible for some. Economic theory provides an upside: if your personal valuation of a gift is much lower than the recipient's subjective valuation, the overall outcome of a even a small gift is a strong net positive. This explains why your \$20 donation to the food bank not only feels good, but makes economic sense.

However, there is a gift that we can give that overcomes both challenges associated with traditional gifts: a healthy body produces blood essentially for free and has no problem recovering from a small loss every so often. On the receiving end, the gift of blood is invaluable, so the ratio of the receiver's valuation to the giver's discomfort is dramatically high! But that's not all. There's a recent study that claims actual health benefits for blood donors.²

I have been on both sides of the equation. At an earlier point in my life, a family member needed blood transfusions and I am forever grateful that these were readily available. It definitely saved a precious life! Unfortunately, I have been prohibited from donating blood in Canada due to living in Europe during the mad cow scares of the 1980s and 1990s. The rules have finally been changed at the end of 2023 and ever since, I am donating blood at the minimum eight-week interval that is possible.

The Canadian Blood Services reports that donated blood remains a scarce resource.³ So if you are eligible and it's otherwise possible for you, donate blood! Give yourself a push and book an appointment! Trust me, it will put an immediate smile on your face and make you happy!

Martin Karsten

1. Anik, Lalin, Lara B. Akinin, Michael I. Norton, and Elizabeth W. Dunn. "Feeling Good about Giving: The Benefits (and Costs) of Self-Interested Charitable Behavior." Harvard Business School Working Paper, No. 10–012, August 2009. <https://www.hbs.edu/faculty/Pages/item.aspx?num=36430>
2. Darja Karpova, Hector Huerga Encabo, Elisa Donato, Silvia Calderazzo, Michael Scherer, Miriam Llorian-Sopena, Aino-Maija Leppä, Roberto Würth, Patrick Stelmach, Despoina Papazoglou, Alessandra Ferrelli, Steven Ngo, Iuliia Kotova, Sabine Harenkamp, Kai Zimmer, Dominik Wolf, Jasper Panten, John Reed, Adriana Przybylla, Torsten Tonn, Annette Kopp-Schneider, Lars Velten, John F. DiPersio, Terrence N Wong, Dominique Bonnet, Halvard Bonig, Andreas Trumpp; Clonal Hematopoiesis Landscape in Frequent Blood Donors. Blood 2025; blood.2024027999. <https://doi.org/10.1182/blood.2024027999>
3. Canadian Blood Services. "Rapid growth in the demand for blood products could cause national supply to dwindle." June 26, 2024. <https://www.blood.ca/en/about-us/media/newsroom/rapid-growth-demand-blood-products-could-cause-national-supply-dwindle>

THE SOLUTION TO SHEDDING SEASON

Do you find your carpets covered in clumps of fur despite vacuuming daily? Do you have too much free time on your hands? If so, I have the solution! Use your pet's fur to create a mini version of them through the power of felting!! (**Disclaimer:** this will only really work with softer down fur)



TOOLS

- Felting needles (extra in case of breaks)
- Felting pad/foam pad
- Copious amounts of your pet's down fur (the softer fur clumps on your carpet and in the corners of your house)
- Felt (for colour details and eyes)
- Felt ball for base (optional)
- Trimmers (optional)

STEP 1

Gather materials.

STEP 2 (SKIP IF USING A FELT BALL AS A BASE)

Take a large amount of your pet's fur and vigorously stab it with the felting needle. Keep the felting pad below you as a surface to felt against. Rotate it frequently to stab all sides evenly to form a ball.

STEP 3

You will almost certainly stab yourself with the felting needle. You may skip this step if you can.

STEP 4

Take your felted ball and gather a clump of fur where you want the nose to be. Attach the fur to the ball by stabbing the edges first. The more you stab it, the smaller and denser it will be. Use this to shape the nose. You may need to add the fur in layers for a longer nose.

STEP 5

For the ears, take a separate clump of fur and place it on the felting pad. Stab it until it is a dense flat sheet. Fold it in half to form a triangle and stab it until it is fully attached. If the ear is too small, add more fur. If it is too big, cut it into two ears. If you want cleaner edges, place the ear between two pieces of cardboard and carefully use the felting needle to tidy up the edges. Repeat for the other ear.

STEP 6

Attach the ears to the head. How you do this will depend on the shape of your pet's ear. Like every other step, just stab it a lot to attach sections.

STEP 7

Downy fur will likely not have your desired colour range. Use felt to add details such as eyes, nose, mouth, and any fur patterns.

STEP 8 (OPTIONAL)

Use scissors to trim the edges and clean up the final product.

Fluff E. Feltingson

TOP 10 SUNNYDALE MOMENTS

1. That time my bike was stolen
2. That time I nearly broke my pelvis on the swings (*I was a two-swing burrito*)
3. That time Yourneil stole my candy (*asshole*)
4. That time my friend's mom invited me over for curry (*wholesome*)
5. That time I had a nightmare of enrolling into Cedarbrae and being set on fire
6. That time somebody else was set on fire (*phew*)
7. That time my bike was stolen
8. That time I was invited over for Eid (*wholesome*)
9. That time Rowan said he would roll a boulder over me
10. That time my bike was stolen

TALKING TO AN AVGEEK: A GUIDE

So you have that one friend that's a self-confessed AvGeek ("Aviation Geek," for the unacquainted), and you don't know how to talk to them. It's not that they talk about planes *all* the time—in fact, they are usually quite considerate about *not* boring you with such trivia. But no matter how hard you try, you just can't... understand them. A typical conversation with your friend Constantine would look like this:

"So, Constantine, how did you spend your weekend?" you might ask.

Constantine's eyes light up. "I went to the airport! I caught a WestJet 737—" he begins with enthusiasm.

"Oh! You went on a short trip?" you interrupt, surprised. You want to hear more. Constantine looks at you mournfully, clearly disturbed by the interruption.

"I caught a WestJet 737 rejecting its takeoff in the snow. I had to wait for like four hours, but it was *so* worth it. I mean, the last time I saw an RTO was —"

"You spent four hours at the airport?! In the cold?! For one takeoff?"

Constantine doesn't understand your surprise. "Yes."

You shake your head, unable to relate. Plane-spotters like Constantine would like to enthrall you with stories of their latest catch. A rare plane, a new angle, a new paint job on an old turboprop... all of which might seem deeply boring to you. However, if you don't want to end your friendship with Constantine, your best path forward is to make some complimentary comments about his pictures. Specifically, you will want to comment on the plane itself, not on how beautiful the day is. This *will* encourage Constantine to talk some more, but eventually, he will subside, grateful that you have given him a forum to express himself.

Or maybe there's your friend Cassandra, who stares intently at her laptop, clearly watching something when she should be doing her homework. You might ask her:

"Yo, Cass! What're you up to?"

Cassandra looks up at you, startled. She mumbles, "Erm, taking a break. Watching something."

This piques your interest. "Ooh, whatcha watching?" You head over to her, expecting to see her engrossed in the latest DDOI upload or whatever else you *thought* she might have been interested in.

Instead, you see a black screen with small dots moving slowly across it. At the bottom, coloured subtitles pop up, then disappear. "What's this?!" you demand, certain that no living human could have their attention captured by such banality.

"Shhhhhh!" Cassandra chides. "You see this plane right here?" She points to one of the coloured dots that's tracing a small C-shaped path across the corner of the screen. You are surprised that this is a plane. You wonder how she knows it is a plane. "It's just had an engine failure, and it's returning to the airport. I'm listening in on the air traffic control recordings."

"You're listening... to the control tower talking to this plane?"

"And all the other planes. It's fascinating. Look at how they pull every other aircraft out of the way." She gives you one excited glance. This is your window of opportunity. AvGeeks like Cassandra will choose when to include you in the conversation, and you don't get second chances. Your best option here, if you have a few spare minutes, is to ask her play the audio out loud and walk you through what's happening.

Armed with this knowledge, you think you're ready to have more meaningful interactions with Constantine and Cassandra. But then you remember your *third* friend, Claudio, who's a little more ambiguous. It's not *what* he talks about; it's *how* he talks. You realize this when you ask him the best route from campus to St. Jacobs one afternoon, and he replies absently with:

"Well, the one-niner-alpha should be along in 5 minutes, according to Maps."

You do a double take, not understanding anything he just said.

"The... what now?"

Claudio looks at you, mildly abashed. "The 19A."

"Oh, why didn't you just say so?"

Claudio looks defeated. "I just... did. Sorry about that." You don't understand why his face is turning red. You also don't understand why he's walking *along* the yellow line dividing the bike path, instead of to one side of it, like pedestrians normally do. AvGeeks like Claudio are a little harder to deal with. These ones think in procedures. For every action they take, an unseen checklist is being ticked off, item by item, in their brain. Folks like Claudio are a little more absent-minded. Instead of paying attention during meetings, they might be charting out new flight paths for their next MSFS session; instead of listening to lo-fi beats during work, they close their eyes and give their attention to the musical sound of two GE90 engines spooling up during takeoff; instead of watching a movie, they use Perplexity.AI to search for the most optimal angle of climb for a single-engine jet aircraft.

Yes, with folks like Claudio, you might want to avoid the topic of aviation altogether.

(Disclaimer: If some of the examples here are weirdly specific... it's because they are.)

eternal_peace

PEEVED.

I'M ANGRY AND NOW IT'S YOUR PROBLEM

You know what I dislike about this school right now? People in the silent study part of the library acting like it's a social spot. There's group study FOR A REASON. And for Pete's sake, turn your phone on silent while you're here! Some people are trying to pass their classes. And read fanfiction (that's probably just me but the chances are never zero). SHUT UP. And another thing. If we're paying so much to be here, why can't I bring my dinner to the library? If I spill it while eating, it's on MY devices, and yes, I'll clean my mess. If the smell bothers people, they should suck it up, because it smells better than half the school not wearing deodorant regularly. I'm looking at you, Math, Engineering, and Science. Environment kids, you're on thin ice. Another thing that makes me genuinely upset is that no one is happy here. Everyone's walking around looking as if their ice cream fell in the grass two minutes ago. Unless they're with friends. Then they're actively being menaces to society, taking up all the sidewalk space, talking too loud in the library, and reminding us all that there's more to school, to life, than whatever test or project we're stressing over. Lucky bastards.

Addition: You'd think I'd complain about WaterlooWorks. Unpopular opinion, I actually like the new UI. The old one made me afraid to apply for jobs. I'm sorry.

Jochemist

mathNEWS ADVICE COLUMN

URGENT

Unlike a regular advice column, inspired by the inverted classroom model, I am reaching out to the fine readers of mathNEWS for advice.

My question is, *how do you come up with article ideas?*

I've had such terrible writer's block lately, to the point where I am asking the masses how to overcome this ailment. At this advanced stage of my illness, I am willing to try any treatment, but would like to avoid general anesthesia if possible. I am also allergic to penicillin.

peacelovemath

ST. JEROME'S LIBRARY DEFUSION GAME SETS

At the St. Jerome's Library a few months ago, I was able to try out the in-library defusion game sets. I recommend the sets for students and faculty, particularly of St. Jerome's University.

After trying out one, I highly recommend St. Jerome's for having the world's most entertaining defusion game sets.

I tried several of them, including one of the more accessible word puzzles games, and one of the manual dexterity games, both played in groups.

The word puzzles game is accessible to a maximum of four players or teams, per session. In it, players form new words by adding suffix endings (such as -S) or compound prefixes (one of my favourites is E-) to them. Ooze would become Oozes, Invite would become E-Invite. Punctuation is an assumption. Is E-Oozes a word?

As well, players may add portmanteau words to previous players' words. The organizers of the word game set provide the players with several play options. Some of the options are including choose your own tally score method.

The organizers provide options for players to design a portion of their own game experience as well. Do you accept spaces in the middle of words? Do you allow blank tiles, to be replaced with letter tiles, to return the bank tiles to circulation? When the tiles remaining are below seven, how are the tiles distributed between players? (Do three get two each? Who gets one? Does this person get to reclaim the blank tile?)

Options for players to take a role in design are clearly explained to avoid confusion.

One of the most important game design options for players is including multiple ways to determine a winner. Another popular option is only one turn per player. I chose multiple moves per player or team. There is also an option for early finish, although I did not choose this option.

The manual dexterity sets I tried include scoring options for the defusion game set. You may only add points for your player if the pieces are not moved or disturbed.

I recommend identifying the higher points moves more quickly in the game. For example, where is the multi-coloured bar? Are you able to attempt removing the bar yourself? Should you go for the bar quickly or after several turns? An expanded form of these games would be welcome!

The games include several sets in both groups. The games are intended for students at the University of Waterloo.

E. Bernath

A CONVERSATION WITH TED NELSON

I went on a tour of the Internet Archive a few days ago; a real, physical place that you can visit in San Francisco. When I went, there happened to be a conference on the same day. Not only did this mean that the founder of the Internet Archive was giving the tour, it also meant that they had a special visitor: an elderly man in the corner, hunched over a cane, whose wisps of long white hair hid a jovial smile.

They introduced him as the man who coined the term “hypertext.”

That is, he’s the one responsible for the link.



I wasn’t always good at talking to people. For that matter, I’m still not convinced I’m good at it now. I’m far better than I used to be though, but to this day it feels like an intentional skill. An exercise, with component parts.

Every time I’ve taken the RAADS-R,¹ I’ve scored near-zero on every category except for social relatedness, which could nearly score me a diagnosis on its own. I can deal with textures, senses are fine, I’m not that fond of trains² or any other special interest, but unfamiliar conversation? eek.

To this day, trying to get into a conversation, trying to talk to people I don’t immediately connect with? It feels like swimming through a sea of peanut butter. Nothing works correctly, and every motion is stunted, restricted. Any success is a triumph.

It’s, in short, less easy than it feels like it should be.



The Internet Archive tour is incredibly cool. They show you their archival efforts, they play an old phonograph record, they show you the book scanning machine. They even take you to see a portion of the primary servers hosting the archive: a server stack against the back wall of a refurbished church, where their primary cooling mechanism is an opened window. To top it off, at the end of the tour they gave all the tour guests free ice cream. I’d stayed behind in their church hall / server room, and ended up at the back of the line.

With the elderly man with the cane.

There I stood in an ice cream line alongside the man who coined hypertext.

We talk a little bit. We get our ice cream. All the tour guests disperse. I go stare at a bookshelf. The man sits at a table, and while all the other tour guests have split into their groups of families and friends, the man with the cane is sitting at a table, alone.

If it was anyone else, or in any other context, I might have just gone home. But it’s, again, *the man who coined hypertext*. Further, for the past year I’d been going to Socratica events where they make all attendees promise that “If I see someone sitting alone, I will go be their friend.”

I suppose I had to try.



The very first sentence he said, I had to ask him to repeat because I didn’t catch it. Immediate low point. The peanut butter thickens. I asked “did you expect the current state of the internet,” to the man whose entire job was to predict the state of the internet. Another low point. The peanut butter turns nearly solid.

I kept trying, though.

And he kept talking.

I learned all of the things anyone with a cursory understanding of that time would already have known. He told me about his friend Douglas Engelbart; about The Mother Of All Demos³ where Engelbart demoed a fully-functional Google Doc to a world still seventeen years behind the first release of Windows. He taught me about ARPANET, and about the woman who realized that companies might have some interest in using such a system, and so added the top-level domain .com. These were probably things anyone could have learned from just reading his several books. Each time he had to explain basic events to me, basic components of his story, I worried I was offending him with my ignorance. The peanut butter only tightened.

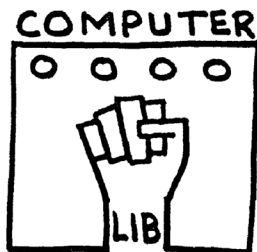
But if you talk to someone long enough, the peanut butter will thin, and you can get at what really matters.

Eventually, we talked about his wedding. It’s far easier and quicker to get married in Marin County than it is in New Jersey, which is important if your friend’s health is in steady decline and you want him at your wedding.

We talked about getting old. Your speech starts to go at some point, no matter how eloquent you may have been earlier in life. It’s frustrating, but after a certain age, it’s better than being dead.

We talked about his family. About his father, roaming America in train cars he had questionable legal status to board. About his grandmother, accidentally becoming trapped on a coast guard vessel in the 1890s as it sought out smuggling vessels. About each, hearing the sounds of people dying; his father, hearing men be thrown from the trains; his grandmother, hearing smuggled Chinese labourers, chained both to each other and a giant metal weight, be cast into the ocean by their smugglers, chains attached.

Looking back, it was an odd thing to talk about. But these weren't supposed to be the Ted Nelson story. They were just the stories he felt were worth passing on.



The peanut butter sensation had melted away by the end of the conversation. It's never easy to get through, but it's almost always worth it. Try. If the feeling is in *any* way familiar to you, I implore you: try.

I'll keep trying. It let me sit with an old man named Ted, and hear stories from times I'll never know.

molasses

1. A very neurotypical pastime.
2. As proven by **mathNEWS** 157.5: *Don't Take Trains*.
3. https://en.wikipedia.org/wiki/The_Mother_of_All_Demos

As an aside, peanut butter and molasses? Dream sandwich combination.

N FUNNY (OR AT LEAST MODERATELY HUMOROUS) NOTES FROM MY PHONE

I HOPE THESE MAKE YOU EXHALE AIR OUT OF YOUR NOSE SLIGHTLY

Most of the time, my mind is an inscrutable whirlwind of various thoughts (random ideas, musings, plans, concepts of plans, etc). But sometimes, out of the storm, there coalesces a funny thought. If I'm lucky, I have my phone, or some other notetaking device, as well as the wherewithal to write the funny thought down, and I've collected the fruits of four years of occurrences of that perfect storm in this article.

- Damn bro are you a mushroom farmer?
Because that was a Shittake
- What do mathematical chemists do?
They learn Series Theorems to then develop Serum Theories
- What do you call a plant scientist that got a prosthetic leg?
A Botanist that Bought a Knee
- "You were gonna be a great pharmacist! But now, with your academic position and bad habits, all it seems you do now is Proctor & Gamble!"

abs(Jester)

ADVANTAGES VS DISADVANTAGES OF 7PM CLASSES

ADVANTAGES

- It's not an 8:30am class!
- I have MUSIC 140 & 246. It's relaxing time to listen to stories, jot down some notes, listen to music excerpts and movie scenes. Even the homework is to watch movies and listen to music!
- I'm a night owl. Night time is when I'm least sleepy and most productive.
- It's a wonderful time to sell ducks to people :)

DISADVANTAGES

- Club events generally start around 6:30pm.
- My dinner time is usually 7pm. Either I eat dinner early and run to class, or eat dinner at 10pm.
- Less time to do assignments due 11:59pm last minute.
- No time to do prod night surveys.

mathgeek

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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N CANON EVENTS I ENCOUNTERED AS A WATERLOO MATH/CS STUDENT

FROM A GRADUATING CS MAJOR

- Meeting tons of people in first year that you will never see again (because of different courses/co-op sequence)
- Blanking on assignment/exam questions
- “Best place to cry on campus”
- Dooming about 225%
- Spending your first university year fully online
- “Some of you might be feeling a little bit sad”
- Seeing M questions about “transferring from Math to CS”
- “The [CS transfer] cutoff this term was 100% [in CS 13/46]”
- Feeling your heart drop when you see “Your feedback and scores for <course name> are available”
- Dooming about your GPA
- Dooming about co-ops
- Doomscrolling on LinkedIn
- Looking at student reviews on UW Flow
- “So true bestie”
- Getting free pie on “Pi Days”
- Skipping a lecture for a course to study for said course
- The obligatory post-midterm/exam doom Piazza megathreads
- Keeping track of M different UW websites
- Sitting through endless resume reviews and bootcamps
- Getting rejected from Hack the North
- Cheering when you get 100% on release tests on Marmoset
- The legendary “The Legend of Flat Link” Twitch stream
- “How did someone land FAANG in their first coop term”
- Checking the employment rates on UW’s website daily
- Getting honked at by a goose
- Getting your first Lazeez
- Regretting getting your first Lazeez
- Swearing you’ll never get another Lazeez ever again
- Getting ghosted on Aphrodite
- Realizing your electives take more time than your core courses
- Getting bombarded with questions as an upper year
- Going from attending all your lectures in 1A to attending none of your lectures in 4B
- Spending more time at the rock climbing gym than on campus

Congratulations to everyone graduating this term!

mcpenguin

MY BRAIN IS SCRAMPLED EGGS

ENJOY SOME EXTRACTS OF DRUNK CONVERSATIONS/NOTES FROM MY NOTES APP :)

How am I this tired and it’s only the **2nd week!?!?** I have no thoughts, no brain cells, head empty. As a consequence, I decided to submit some extracts from my notes apps of drunk conversations I’ve had when it was too loud to talk at clubs/parties or random drunk notes:

- “Muppets are creepy as shit” no comments, just valid and I stand by this statement
- me: “How do you deal with us sober???”
my friend: “I was a camp counselor”
- “I am very high” in the same note “I can’t read my paper in peace anymore.” I might have gotten too high at a concert and decided the way to ground myself was to read an academic paper... guys I swear I’m normal (for a Waterloo student)
- “I finished the rest of the tequila” self-explanatory, I also don’t remember this... wonder why??
- Title “Drink stolen” the only thing written in the note “Blue alc” I don’t remember the context but I hope the drink stolen was returned
- I found multiple notes or tracking shots like “5 shots of gin” and “2–3 shots” but I’ve never been

successful at tracking shots unless you give me a sharpie and a competition. Going shot for shot is such a bad idea... I will inevitably do it again because I never learn :)

- “Where mileage” maybe a better question, what is mileage??
- Honorable mention “o????”

ihavesomuchenergy

**I love grad students.
They’ll do anything you
tell them to.**

PROF. ROSS WILLARD

ANIME REVIEWS PART 14

I'm here for the spring (for the first time!), so the reviews will continue.

OSHI NO KO — 6/10

May as well get the controversial take out of the way first—I don't really have much to say about *Oshi no Ko*. It's one of the most beloved shows of recent years, and its first episode is very memorable, to be sure, but I just don't find acting or the entertainment industry that interesting or relatable. Barring fantasy anime, I can't think of anything further from my interests. I'm sure it has its audience, but I'm not a part of it.

PUELLA MAGI MADOKA MAGICA — 9/10

(I'm not just a contrarian, see?)

Madoka Magica is amazing, and my high school friends have been saying so for ages now. I was reluctant to watch it at first because it sounded a little too fantasy-ish, but I figured I'd give it a try when I learned that it was written by Gen Urobuchi, whose *Psycho-Pass* is one of my all-time favourites. And it didn't disappoint!

The titular Madoka Kaname is an unremarkable middle schooler who befriends a transfer student named Homura Akemi, and learns from her about the sinister world of “witches”—strange invisible monsters that curse humanity from the shadows—and about the secret lives of magical girls who fight them to protect humanity. Not long after, Madoka and her friend Sayaka Miki are greeted by a cat-like creature named Kyubey, who offers to grant them a wish in exchange for having them join the guild of magical girls themselves.

Why them? Why now? At first, these seem like the contrivances typical of a Disney movie, but what gradually unfolds over the rest of the show is, in my opinion, nothing short of a narrative masterpiece. It gets dark, which I vaguely knew of before watching all of it, but I was amazed at how quickly it did and how well that darkness served to explore the motivations of the cast of magical girls and their perspectives on hope, purpose, philosophical ethics, and whether or not a single wish is recompense enough for being made to confront the horrors of witches, or worse.

I'm being intentionally vague because you should absolutely be watching this instead of reading my yapping about it—even if analyzing narrative intricacies isn't your thing, the art and music of *Madoka Magica* are fantastic too. In particular, the witches are visually depicted in a way that looks as if they're made of craft supplies and other mundane objects, in a way that's incredibly striking alongside the usual anime style used for the rest of the show. Truthfully, my only complaint is that it takes a bit of time for the more “thriller-y” stuff to really get going, but it's worth the wait, especially for the absolute cinema that is the ending. I highly recommend it.

PEACH GIRL — 7/10

Did you ever read *Dork Diaries* as a kid? I did, and I think the best way to describe *Peach Girl* is half that and half telenovela, in anime form.

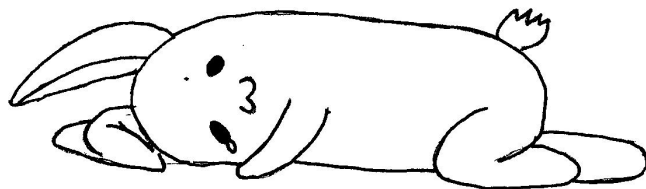
It follows the unassuming life of Momo Adachi, a high schooler who receives more than her fair share of unwanted attention due to her tanned skin and chlorine-bleached hair. Both are the result of her previously being on a school swim team, but people around her associate the look with the delinquency-adjacent *ganguro* fashion culture, and besides that, there's a more general stigma in Japan (and many other places) about dark skin—it's a whole thing. But Momo's got worse problems than that: She doesn't know if her longtime crush Toji requites her feelings, she starts getting flirtatiously pestered by another guy named Kairi, and her “friend” Sae is seemingly hellbent on exacerbating Momo's woes. To further the analogy with *Dork Diaries*, Sae is basically like Mackenzie but even worse. (I really hope at least one person gets this reference. Please?)

Besides being fairly obscure, more so than what I normally cover, *Peach Girl* is also different from most other entries in this review series in that it's a shoujo anime. The closest I've come to this before is *Ouran High School Host Club*, which is more of a genre deconstruction, whereas this is a true out-and-out shoujo with its tropes played straight for the most part. It's also super melodramatic, and about 95% of the conflict is single-handedly generated by Sae's seemingly boundless vindictiveness towards Momo. Kind of reminds me of a certain someone who's in the news a lot these days...

So objectively, this show is pretty mediocre. But it has the kind of silly, schmaltzy drama to it that I kind of like reveling in every once in a while—it reminds me of the romance novels I used to read a lot of when I was in middle school, and in that capacity it found it to have a sort of abstract sense of nostalgia for me. From a purely narrative perspective, though, it's not great. It has a simplistic story with characters and dialogue that are, at best, a little deeper than the ones in the novels of my childhood. But if you ever find yourself in the mood for some classically sappy shoujo slop (I should clarify that I say “slop” endearingly here), *Peach Girl* might be just what the doctor ordered.

Now, if you'll excuse me, I'm going to go back to dying in PMATH 352. I might be able to get Part 15 out this term if Xuemiao's assignments let up, but the odds aren't good.

yalevoylian



THE NOMAD

I haven't lived anywhere for more than four months at a time since I left my first year dorm at the end of 1B.

Every four months, like a seasonal ritual, I pack up everything in my life into cardboard boxes and plastic tubs and cloth grocery bags, barely holding it together. It used to really annoy my parents (because, of course, when I moved it meant *they* were moving *me*) but as the years have stretched on, it's something they complain about less. It's more of a fundamental fact of nature than an irritant anymore.

There's some satisfaction in being good at moving. Everything fits like a puzzle into a smaller and smaller series of boxes. It's a feeling of almost mathematical purity: shrinking the mess and complexity of a bedroom into the minimum possible physical space for transport and reconstruction elsewhere. A life can be reduced to these equivalent boxes.

I still hate moving, of course, but I can't help but feel proud to be getting better at it.



The defining feeling of my first year or two of university was transience. I felt like I had no roots anywhere. Part of this was the simple fact that I was moving out of my childhood home for the first time. Another part of it was that this was during the mid-COVID era, with a lot of shifting rules about how many people I could see, how, and when.

If I'm being honest with myself, though, this is because I never sought to plant roots anywhere. It sounds strange looking back, but I was so swamped with work I forgot to intentionally make friends. I didn't put effort into seeing people, keeping in touch, leaving my room to explore the big, wide world.

I only really noticed how bad things had gotten at the end of 1B, when I was sitting alone in the audience at a talent show, watching everyone I knew go up on stage together to sing and dance and laugh. Or maybe it was when I was moving out, and everyone I knew was moving into dorms together, and I was moving into a dorm alone. I felt like I might as well have not been there at all.



Every time I move, I inevitably look back on old places I've lived. Pictures I've taken, things I've written in my journal, or just flicking through well-trodden memories in my mind like polaroids in a drawer. I think I bring more of myself to each place every time I move. I recognize posters, paintings, knick-knacks, bedsheets.

There was no moment in particular where things got better for me. It started with a few leaps of faith, a few new friends, but even as I got a new social sphere and consistent activities,

I couldn't quite shake the feeling that this could be transient, too.

In the end, there was nothing I could say to convince myself things were different. The only way to get it all through my head was to wake up, every day, and see that things were fine. I was cared for when I needed help. I was trusted to care for other people who needed help.

I carved out a space for myself that feels solid and real and present. I'm still grateful, because I remember what it was like to not have it. It took a lot of faith and love, and a lot more time than I hoped—but it couldn't have happened any faster.

I can look back now and the path seems obvious and inevitable. But every life is a uniquely-treaded path, and you can only see a new path once you're done making it.

Today, though, things are starting to feel different again. I'm pulled out of the present, not by the past or by my own imagination, but by the future. In my last co-op term, I moved away from Waterloo for the first time in years. For the first time ever, I fell into a non-work routine that could very easily—very likely, even—become my working adult routine.

To be honest, it feels weird to come back to being a student, to be prepping for a life I've already lived. It's been weirder still knowing I have another work term and another school term ahead of me before I graduate. Am I going to keep oscillating back and forth between these two worlds? Will that unroot me even more?

But something else is changing, too. I can see the end of the tunnel approaching rapidly.

One day, maybe soon, I'll wake up in a bed I've been sleeping in for six months. I'll look out the window and see my neighborhood, changing colours before my eyes with a whole year's cycle of seasons. I'll have winter boots next to summer shorts in my closet. I'll have finally settled in one place. I'll have roots.

But I've still got plenty of time between now and then. I can make these moments matter too. I can bring this chapter of my life to a close, rather than have it simply end.

I don't dread moving anymore. I don't see it as something yanking me out of my life, or me cutting the roots out from under my own knees. Because I've done it so many times before. Because I can trust that wherever I end up, I can carve out a space which feels safe. Because I know that home can't leave me when I carry it with me.



Sometimes, when I tell this story to myself, I end it there. It's the cleanest version of it. It has a beginning, middle, and an end. It's narratively satisfying.

But I don't think it's honest. And because you and I are friends, I feel like I should at least be honest to you, if not to myself.

I still don't want to be living like this.

Dick Smithers

WHAT NOT TO DO IN IBIZA

SENT FROM IPHONE

- Buy club tickets from untrusted sources
- Forget to wear sunscreen
- Drink the tap water
- Eat the salad
- Go on a boat party
- Get horrible food poisoning and spend 3 hours throwing up off the side of a boat
- Take a three hour ferry back to the shore in choppy waters
- Take a four hour coach to your hotel
- Die inside (and mostly outside)
- Pronounce Ibiza with a "z" instead of a "th"

Lars Nootbaar

WHAT TO DO IN IBIZA

- take a pill
 - (to show Avicii you're cool)

aaqsr

APRIL 2-3, MINOTA HAGEY RESIDENCE

From a snowstorm to a lightning storm —
The rainstorm caused a flooded dorm —
But come the morn, it's very warm;
It's a beautiful day.

finegeometer

EVERY SEX PISTOLS ALBUM RANKED

- Never Mind The Bollocks

snowdozer

NEW COURSE: BET 365: DEVELOPING APTITUDE FOR GAMES OF CHANCE AND SKILL

An introductory course in variable feedback conditioning and stimulating the brain's reward system. This course introduces students to game theory via skill-based participation in games of chance. Students will use the course referral code through the affiliated application for assessments and exams.

LEARNING OBJECTIVES

- Basic strategy of mobile slots, parlay selections, and running it back
- The 99% of Gamblers theorem
- The Gambler's Fallacy fallacy
- Delayed gratification and the *You-Gotta-Spend-Money-To-Make-Money* lemma
- Reading a horse via oral exam and visual acuity test—basics of understanding if it has that dawg in him
- Basic applications of the *Always Bet on Patrick Mahomes* theorem
- Fundamentals of threatening to bash in the knees of the 1919 Chicago White Sox if they don't throw the World Series
- CS:GO case opening strategies
- The *Fuck It We Ball* theorem, basic and advanced gut trusting
- Playing with house money and investing all proceeds back into your business for exponential returns
- The benefits of short-term debt for long-term gain: payday loans, cash advances, and house remortgages
- Proficiency in modern edge-providing tools such as ChatGPT, world cup predicting cephalopods, and divining rods
- Gambling as a cure for alcohol addiction

FINAL EXAM

Students are given 20 dollars, your grade in this course is the amount of dollars you can win with the initial fund. You must pass the final exam to pass the course.

Please note that any losses resulting from the final exam must be made up for in subsequent course attempts

This course is cross-listed with CO 488 (Different Applications of Crypto)

Future course options include: BET 366 Futures and BET 465 Options

aphf, peacelovemath, Yamnuska,
no pun indented

UNIVERSITY OF WATERLOO STUDENT MISTAKEN FOR NORTH KOREAN DEFECTOR AFTER PANICKED CLARIFICATION AT SHENYANG AIRPORT

SHENYANG, CHINA—A Canadian university student nearly sparked an international incident earlier this week after a nervous over-correction at Shenyang Taoxian International Airport made him sound like a defector mid-exit.

While checking in for a flight to Incheon, South Korea, the student, born in China yet unmistakably a white-washed product of Western upbringing, answered the agent's routine question, "Where are you flying today?" with a confident "韩国" (Korea). Then paused.

Realizing there was also a flight to **Pyongyang** departing within the hour, the student visibly panicked and blurted out at an uncomfortably high volume:

"南韩国! **SOUTH Korea!** NAN! KOREA! THE ONE WITH K-POP!!"

The check-in agent blinked. Security blinked. A child three gates away dropped his steamed bun.

"Sir... 韩国 is South Korea," the agent replied in broken English, already motioning for backup. "North Korea is... 朝鲜. No need... specify... south."

What followed was a scene best described as **linguistic jazz**: a frantic medley of broken Mandarin, panicked English, and the occasional BTS reference.

"I'm not defecting, I swear!" he reportedly pleaded, flapping his Canadian passport like a Maple Leaf-branded white flag. "I gave up my Chinese citizenship for poutine and mental breakdowns during co-op!"

First hand witnesses claim that at one point, the student attempted to prove his Western allegiance by humming *Dynamite*, which only seemed to confuse the already perplexed gate check-in agent even further.

An anonymous source stated that North Korean officials were "deeply disappointed" by the missed opportunity to acquire a new propaganda asset, citing the student's "perfect blend of foreign education, nervous energy, and geopolitical confusion" as ideal for a televised defection interview.

When reached for comment, the student simply said: "I just wanted some Lanzhou noodles and a safe flight to Seoul. Is that too much to ask?"

Shenyang airport security has since labeled the incident a false alarm, placing it under a newly coined category. **Waterloo Syndrome**: defined as "*panic-induced geopolitical over-explaining caused by overthinking, undersleeping, and co-op-induced existential fatigue.*"

A. Gape

I AM A VECTOR SPACE

MY COMING OUT

- I am a vector space over the field of the octonions (don't worry I figured out a way to make it associative and commutative dw, we're chilling)
- I am an infinite-dimensional vector space with a need to know basis. I need to know.

- The cardinality of my basis is between the size of the integers and the reals.
- I am isomorphic to none. I am unique.

Finally speaking my truth

MUSINGS FROM MY CALI CO-OP

I've been so gracious as to touch pen to paper today to bring you, my eager readers, what you've dreamt of for so long: advice from the experience of a co-op student in California, United States of America.

I promise I'll bring you the musings soontm, just as soon as I can ship this new OpenAI wrapper I'm using to create shareholder value.

no pun indented



Oh no, an unpredictable¹ turn of events. My boss kept me late today (4 AM), so I haven't had the time to write any musings.

1. help

YOU DON'T NEED A SOCIAL MEDIA FOR EVERYTHING

LinkedIn is dumb. I do not want to maintain a social media profile to show why I am employable. LinkedIn posts are stupid and dumb and they're always the most braindead AI glazing CEO glazing no-thought-ass posts. LinkedIn is a waste of time. I see so many people who just farm connections just to pump their numbers up and it is so dumb. Good job, you have 500+ connections, you must definitely know all those people to the point that they might get you a job. I have never gotten anything useful out of maintaining a LinkedIn account, despite all the people who say it is important.

Why do you guys need a social media for everything? Is it that important to share what you think about the book you recently read? Just read the book bruh. If you want to tell people about it then join a book club or something. Posting about it on Goodreads or whatever is actively making you less social, and nobody at this university needs to be less social. It does make sense why things like this are on the rise though. Is it a means of flexing that you read a book or is it because you are desperate for your opinion to be heard? Either way, it seems very superficial to me.

Letterboxd is the same shit different medium, so is Last.fm. Just consume something and then write a comment about it to show that you consumed it. What is the point? These platforms are just a substitute for having friends. If you just have friends you can talk to them about the things you consume and give recommendations, no accounts needed. I bet governments and data-mining corporations love it when you post about everything you like though. Way to make it easy for them.

They even have social media for food. I don't know what it's called but you can post about food you ate and restaurants you went to because I guess it's impossible to recommend something otherwise. Also people are way too reliant on the rating of restaurants and other things. They'll be like "it only has four stars why would I ever go there" and then everyone goes to the same restaurants and they see that their friends thought it was good so they must also think it is good so therefore it is good.

I think that part of my disdain for social media for things like this is the fact that I have a hard time making a real analysis of anything. I can't tell whether a movie or a book or a song or a food is good or bad, I can just tell if I like it or not. A lot of times my opinions are based on pretty simple things because I am a simple guy. If a movie has a car chase, it's a good movie. If I get a lot of food in my order, it is good food. I can't read so idk what a good book is and music is good when it is good and otherwise it is bad.

Strava is the only fake social media I accept because I like Strava shitposts. Some guy drawing an ice cream cone with his run is amazing, someone doing a marathon around a roundabout is incredible. Also Strava led to the discovery of a secret United States military base in the Middle East because

there were very rectangular lines of people's runs in what seemed to be the middle of the desert. Source: VSauce I think.

In conclusion, read my other article in issue 153.6, this is basically an extension of that. Get off your phone, look at the world, use your brain, and keep making funny drawings when you track your runs on Strava.

Yamnuska

UW NANOROBOTICS GROUP ANNOUNCEMENT



**UW
NanoRobotics
Group Pilot
Student
Recruitment!**

We are designing a project-based curriculum to introduce junior students in engineering and science to nanotechnology, aiming to make this traditionally complex and intimidating industry more accessible.

To achieve this, we plan to run a curriculum pilot program this Spring 2025 term. We are recruiting students interested in NanoRobotics who would be interested in participating and providing feedback over the course of the term.

Scan QR code ABOVE to sign up or tell us why you don't want to participate!

link to google form:

<https://forms.gle/QVhJDUAJPMWzPQ1p6>

uwnrg.ca

math**NEWS**

WANT TO WRITE FOR mathNEWS?

Have you ever wanted your own writing to be printed in an issue of the greatest and most prestigious student publication on Earth? Alternatively, have you ever seen a **mathNEWS** article and gone, “yeah, I could do better than that?”

Either way, good news! **mathNEWS** is always accepting new submissions from anyone in the UW student body. We welcome anyone with any level of writing experience, as well as any submission topic (which isn’t going to get us sued). If it’s important enough to you that you’d go out of your way to write about it, we want to hear about it.

If you want to meet other writers—and get some pizza—then you should come to our production nights, which are gatherings of writers to chat, work on articles, and generally goof around. At the end of the evening, anyone who has written and submitted an article will get some pizza.

If you’re picking up this issue when it comes out, the next production night is **Monday, May 26th at QNC 1502**, starting at **6:30 PM**, and then every two weeks after that.

If you just can’t wait and want to start writing now, you can email mathnews@gmail.com for a WordPress account to begin submitting articles, and you can sign up for our mailing list at <https://mathnews.uwaterloo.ca/mailling-list> to get sent reminders of production nights, new issues, and a link to our Discord server.

On a personal note, **mathNEWS** is where I’ve made some of my best university memories, and met many of my dearest friends. If you’ve ever wanted to contribute, even a little bit, then I really urge you to come to a prod night, talk to some fellow writers, and make some friends. Our writers are some of the funniest, coolest people around (and I’m not just saying that to suck up to them).

Can’t wait to meet you!

befuddled
Editor, **mathNEWS**

Oh, and if all you want to do is send in **profQUOTES**, you can just send those to mathnews@gmail.com anytime.

SCIENCE AND RELIGION CAN COEXIST

Some blame the world’s tribulations on the increasing decline in spirituality. Others view some religious beliefs as the root cause of worldwide misery. Both arguments lie on opposite extremes of a spectrum. What we generally see is that the former denounces scientific and materialistic solutions to worldly problems, preaching that religion triumphs above such measures. Meanwhile, the latter uses scientific data and research—sometimes contradicting religious beliefs—to condemn them.

Both groups fail to grasp the simple answer that many of our ancestors observed—and I say this as a religious, chemistry student: science and religion can coexist. Some of the biggest scientific breakthroughs came from religious individuals from all over the world. The Islamic Golden Age is a prime example of a period in which the arts, sciences, mathematics, and philosophy flourished within religious groups. Their findings were not denounced or ignored because they weren’t explicitly mentioned in religious texts, but rather accepted as tangible facilitations to pieces of a world that is ultimately controlled by one above them.

So, when we see public figures and politicians weaponize religion against evidence-backed research, it’s a problem. Similarly, when we see some atheists demoralize certain theologies and their followers, ignoring the scientific and psychological benefits that spirituality has been proven to have on them, we see another problem.

Many people misinterpret religion as a solution to all of life’s problems, when they should be viewing religion as guidelines to said problems. I—and many others with the same faith—believe that simply praying for something and sitting on my hands waiting is not how I am instructed to live. Pray that you succeed in your endeavours, but work to succeed. If depression is a tribulation one faces, they can seek therapy and antidepressants while simultaneously seeking spiritual guidance and meditation from prayer—they are not limited to one or the other. The implication of anything else creates hostility between devout spiritualists and atheists alike, and leads to religious and atheistic extremism.

I say this because—now more than ever—religion is contorted and misused to shame its followers or advance harmful political ideologies. What we’re seeing all across the globe is an attempt to alter and desecrate sacred religious teachings to push Orwellian agendas in so-called democracies. Meanwhile, some deniers of religion use these desecrators of religion as irrefutable evidence that religion should not exist.

The day that a democracy declares one ideology as undeniable truth—while shunning all others—is the day that another democracy ceases to exist. Whether that ideology is rooted in science or religion does not matter. What matters is that it’s another attempt to control, to miseducate, and to strip away our freedoms. And so, I implore you all to understand: don’t overcomplicate your relationships with science and religion. Let them coexist, and let people live.

Usman!

CSC FLASH!

CSC FLASH!

Elections: The Computer Science Club is back up and running for the Spring term! As always, we've fired our old executives and replaced them with new actors. Our elections were held on Thursday, May 15th, though you'll likely be seeing this after the event. There were snacks and a Minecraft LAN party. If you missed it, don't sweat it too much, but just know you're probably on a hit list somewhere in the world.

Service Update: Our general-use server sorbitol will be decommissioned early this term. We sincerely thank the Math Endowment Fund again for funding this SuperMicro server that we've all come to rely on. Goodbye, soldier! You will be missed. ;-;

Events: We've got a plethora of events lined up this term to spark joy in Waterloo once again. One of the cooler things we've planned is a bonfire event later in the term, meaning that if you show up, you might just witness the rare phenomenon of computer science majors touching grass. Just to be safe, bring nose plugs. Naturally, there will be food and other goodies at the bonfire, so keep an eye out for it.

Service Update: As you may or may not know, there was, or still is, a service outage affecting CSC Cloud. We apologize for the inconvenience and are working hard to resolve the issue ASAP. Our Systems Committee is dedicated to ensuring a smooth experience for all our members, so rest assured, you're in good hands.

Club Merch: We have CSC merch for sale! You can represent our very own Codey or the beloved Mr. Goose on your own apparel. Prices start at just under \$2, but if you want to be an ultra supporter (or if you're Jeff Bezos), you can pay up to \$35 for some high-quality fabric! Buy our merch. You know you want to. Come by our office, MC 3036, to check out the catalogue.

Club Pop: The Computer Science Club is excited to announce that we'll continue selling Celsius (the lifeline of computer science students) for \$2 in the club room at MC 3036. Come by to check out our other pop and goodies, starting at just 50 cents each!

Election Nomination Funnies: Two of our beloved club members decided to run for elected positions this term! However, the email they sent to the elections officer was... interesting... so much so that even CT Dalek found himself questioning the future of the club. Here are the emails given here in full for you to enjoy:

can i haz trez pls 🙄👉👈
insincerely,
[REDACTED]

and

wassup bbg,
gimme avp big boy
[REDACTED]
TONG TONG TONG TONG TONG

As we might say, we are Chronically Socially Challenged (CSC).

Codey the Shiba, with bright blue fur,
Wrote lines of code with a programmer's slur.
Whiskey in paw, they'd compile all night,
While bugs and segfaults gave them a fright.

The world passed them by, just code and despair,
Till a flyer appeared in the tunnel's stale air:
"CS Club meets; there's pop and some light!"
So Codey trotted toward the fluorescent delight.

Now they sip with friends, still write buggy code,
But in 2025, they dropped the lone load.
Among snacks and screens, they found their crew,
The club, where blue Shibas feel brand new.

Finally, swing by our club office at MC 3036/3037 and say hi! Odds are, the CSC will be open when you drop in. If you're unsure, just check our club Discord (linked in the footer of cscclub.ca) to see if the office is open. (Note that the office status checker on Discord only works when Codey (and CSC Cloud) is online.)

tralalero tralala



FLASHING OUT

ctdalek

profQUOTES

AMATH 351: MOHSEN REZAEIAN

“ *[Changes to slide titled motivating questions]* Ok, I see you are all now motivated.

“ It’s good that [when the slide switches] it erases my writings, since my writing makes things worse.

AMATH 353: MIKE WAITE

“ I had to think very carefully—well, I didn’t, the books I was reading did.

“ *Professor:* If there’s very little traffic on the road, what do we expect the speed of traffic to be?

Student: The speed limit?

Professor: Right, the speed limit, or maybe 20% over the speed limit.

“ I don’t know if those are great things, but they do make this problem challenging.

“ People do this all the time. They don’t usually blow up unless there’s something wrong with the code.

“ I don’t know if you have a favourite PDE from this term, but if you do, it’s probably the diffusion equation.

“ *[At the beginning of the final lecture]* I wasn’t sure at the beginning of the term that we were gonna make it, that I was gonna make it...

“ We’re gonna define a symbol for the Fourier transform of eta, and because I don’t know what capital eta looks like, I’m just gonna use eta hat. *[Quietly]* I guess I could’ve looked it up last night...

BU 423: DIEGO AMAYA

“ I have this friend who does options trading. He described it like this: imagine you’re in a room and its pitch black. There are other people in the room and everyone’s holding bats. Eventually, you’ll hit someone or be hit by someone!

CS 100: DAVE TOMPKINS

“ And I’m not kink shaming, but there are other parts on the internet where they want your foot size.

“ In 1990, if someone said they had digital sex, it probably means something different than today.

CO 342: MARTIN PEI

“ You could try to download this through the dark webs... I didn’t say that. Don’t quote me on that.

“ Although when I say kappa, I must make sure that I am not lying to you.

CS 146: BRAD LUSHMAN

“ The road to C goes through Haskell.

“ The student course perception survey is the course equivalent to “like, comment, subscribe, hit the bell.” Unfortunately, I don’t have a Patreon.

CS 343: PETER BUHR

“ If you ever saw what the output of your compiler was, you would break into tears.

CS 349: MATTHEW BREHMER

“ Was anyone here alive in 1995? Except me?

CS 350: BERNARD WONG

“ It’s not my job to lecture my father but it’s my job to lecture you guys.

“ *[Referring to his son]* I’m not sure if he’s ready for hex yet... He’s only five.

“ I am not doing this because I am Dr. Strange.

CS 365: ERIC BLAIS

“ This term, I’m part of an acronym committee which is responsible for hiring and recruiting.

“ If you are not careful enough about service, you end up as the director of undergraduate studies.

CS 449: ANA CRISAN

“ *[Talking about her experience doing product research at Tableau and Salesforce]* I’m not trying to sell you on Tableau and Salesforce, it’s just where I have relevant background experience.

CS 452: MARTIN KARSTEN

“ I won’t be here in the evening, but you will be.

“ That will be your best path to getting a good grade, and enlightenment in general.

CS 480: YAOLIANG YU

“ *[As an extension to the trolley problem]* If your partner and your in laws were drowning at the same time, who would you save first? My answer is to make sure my wife knows how to swim.

CS 486: YUNTIAN DENG

- “ The implementations of these algorithms—like a lot of things you learn in university—aren’t actually useful.
- “ *[Returning to the room after looking for a whiteboard marker for a while]*
Student: Did you use BFS or DFS to look for the marker?
Professor: I used the lowest cost search... I couldn’t use A* because I don’t have a heuristic for where a marker is likely to be. So I ran around to all of the classrooms on the second floor, but none of them had markers. Then I went to the third floor, and the fourth floor, and the fifth floor. I found a marker on the fifth floor.

CS 488: GLADIMIR BARANOSKI

- “ You must read this paper. You can read it anywhere, even in the shower, for those of us that shower.

CS 490: NORHAN ABBAS

- “ It is really interesting to see you expressing opinions regarding the project requirements.

CS 492: RICHARD TREFLER

- “ Interesting, thank you. *[Repeated ten times in the span of one lecture]*

ECE 327: NACHIKET KAPRE

- “ *[On Discord]* ts pmo
- “ *[On Discord]* *Professor:* One possible logical example:
“Q: Can I spank the donkey?”
A: Yes, but only if you are kind afterwards.”
Student: freaky ahh prof
Professor: 🐼👉

ENGL 232: J. ANDREW DEMAN

- “ There’s a theory that comics are really like masturbation, y’know, seeing a sequence of still images to create, let’s call it, an experience.

ERB110 (QUT): JESSICA TROFIMOV

- “ Thankfully, the asteroid missed the Visitor’s Centre.

MATH 146: MATTHEW SATRIANO

- “ *[Looks outside, sees blizzard]* I never thought I would live somewhere where it would snow in April.

MATH0078 (UCL): ED SEGAL

- “ I’m sharp. I’m peak. I’m the OG.

MATH 148: FAISAL AL-FAISAL

- “ *[While proving the Taylor Remainder Theorem]* Now, we’ll introduce a helper function.
- “ And there remains the issue of—*[timer starts ringing]* oh, we’re done.
- “ *[Opens the door like two degrees]* Is this open? It’s a matter of perspective, I suppose.

MATH 148: MICHAEL BRANNAN

- “ This has a name, the Method of Undetermined Coefficients, but it’s really just educated guessing.

MATH 235: IAN PAYNE

- “ So, I’m going to be ambitious here, and use the A word.
[Writes on blackboard: Applications]

MATH 249: JIM GEELEN

- “ It’s not gambling if you know you’re gonna win (eventually).

MUSIC 140: SIMON WOOD

- “ *[On teaching]* I haven’t killed anyone yet, so they keep letting me do it.
- “ I’ve taught at other universities. Most universities are run by monkeys.
- “ I have really good allergies. I have pro level allergies. I have GOAT level allergies.
- “ Have you ever thought about a piano? What a remarkably useless thing it is.
- “ Right now, you are booty-licious. Is that still what the kids say?

PHYS 364: DAVID YEVICK

- “ I’m doing this so you guys won’t be trying to find a window to jump down to during the exam. It’s pretty hard to try to find a window in the exam room to jump from.
- “ I’m here in this class teaching because I am completely socially inept.

PMATH 330: CHRIS SCHULZ

- “ We should get some math done today that isn’t *[holds intense eye contact with student]* cursed linear algebra.

PMATH 333: MATTHEW KENNEDY

- “ This is the Weierstrass M-Test. The M stands for Matt.

PMATH 348: YU-RU LIU

“ [Writes “is” on the board] About ten years ago, towards the end of my MATH 135, a student asked me, “Professor Liu, why do you like the number 13 so much?”

“ Let’s pretend we are mathematicians—wait, you guys are all PMATH students...

PMATH 351: KEVIN HARE

“ [On Piazza, student is stuck on Q3 and asks for a hint] I’m also stuck on Q3. It will be bonus.

PMATH 351: BLAKE MADILL

“ The devil works hard but Blake on a non-teaching term works harder.

“ A set is a collection of objects and let’s never speak of it again. That’s wrong but it’s right for us.

“ Most of the math I do wouldn’t be true if not for the axiom of choice, and, well, I got bills to pay.

“ [With an oval with two dots in it and an oval with four dots in it on the board] One has two, and one has three. I know what you’re thinking—it’s very early, I’m locked in the basement of a brutalist dungeon, I just failed PHYS 121, I need you to speed this up.

“ The Cantor is out of the bag.

“ I’m taking both of my kids to the police station tomorrow, because enough is enough.

“ There’s a train ride. I don’t know if there are usually trains at the police station.

“ That was not my best work. It was medium. Mid, as the kids say.

“ The word there? Pick. What’s a synonym for that? Choose. And what does that depend on? Choice. So we’re gonna do this carefully, for you, because this is my nightmare.

PMATH 352: MICHAEL RUBINSTEIN

“ Professor: I was actually early today, but I got a speeding ticket.

Student: Where?

Professor: Ring Road.

PMATH 365: JASON BELL

“ I’ve gained a lot of weight this semester eating all these donuts, but that’s a price I’m willing to pay.

“ “You didn’t go to Harvard? Are you a fraud??” Yes, but for different reasons.

“ The Winklevoss twins are genetically identical—you can’t tell the difference between them. They can’t even tell the difference.

PMATH 464: XUEMIAO CHEN

“ Actually, it’s not hard to visualize four dimensions.

“ If you really think about it, schemes are the right way to describe our world.

STAT 231: HENAN XU

“ You can see that the COVID-19 vaccination rates were higher among Asian Americans, because us Asians are more obedient, I guess.

STAT 231: JAMES HUANG

“ I would like you to know that we are not making the final exam easier.

N CLICKBAIT TITLES ABOUT YOUR FAVOURITE WEBSITE

- They did WHAT to WATERLOOWORKS?
- WATERLOOWORKS has been CHANGED COMPLETELY?!!
- They REMOVED the APPLY BUTTON on WATERLOOWORKS??
- WATERLOOWORKS’ BEST FEATURE has DISAPPEARED?!
- Is it JOEVER for WATERLOOWORKS?!
- WATERLOOWORKS’ RESPONSE TIME is UNBELIEVABLE!!
- They COMPLETELY OVERHAULED the WATERLOOWORKS UI???
- WHAT HAPPENED to WATERLOOWORKS?!!
- WATERLOOWORKS is CANCELLED!?
- PEOPLE are RIOTING over WATERLOOWORKS!

Whole Number Haver

yet another prod night I missed because of this website

**Give us a bigger office,
and the rag lives.**

A POSTER ON THE WALL IN
THE mathNEWS OFFICE

CONLANG INTRODUCTION: HYMMNOS

WAS NUM RA IRS WASE GAT EN TES GAUZEWIGA

Conlangs were mysterious to me until the day I heard *EXEC_COSMOFLIPS*/ by KOKIA. I was watching a Minecraft video showing a lot of gorgeous landscape and structures¹ with this song as the background music. I was immediately hooked by it. I looked it up and discovered this rabbit hole of Hymmnos and the *Ar tonelico* trilogy. Hymmnos is the constructed language created by Akira Tsuchiya for *Ar tonelico*, a sci-fi/fantasy JRPG. That is, the developers of this game made its own language with meticulous details, for world building. Hymmnos has its unique phonetics, grammar, vocabulary and writing. There is a whole wiki page to introduce you to it.²

In the video game series, Hymmnos is an ancient language that only very few people can comprehend. The Reyvateils, who are a special race that are sentient AIs in biological form, can sing songs written in Hymmnos, to ~~draw energy from the server~~ cast Song Magic (wow). The Reyvateils who can sing the most ancient Hymmnos songs can do many powerful things, like rewriting the rule of operation of the planet by interacting with its ~~super computer arrays~~ Towers, aka “Ar tonelico.”³ Technically speaking, you can say that Hymmnos is a terminal language.

The unique part of this conlang is that, the first three words in a sentence in Hymmnos defines the “emotion” of the sentence. That is, the writings can convey emotions! For example, the sentence “Was yea ra chs hymmnos mea” (translated to English alphabet) means “I will be glad to turn myself into a song.” “Was yea ra” are the emotional sounds that does not have any materialistic meaning. The Level 1 word “Was” defines the intensity of the emotion, which means “Very much.” Level 2 words name the type of emotion being felt, and “yea” here means “Happiness.” “ra” is a Level 3 word, and it means “I want this to last.” The rest of the sentence is simple, as it follows the pattern of verb – object — compound or object.

Although the lyrics are very difficult to comprehend, I enjoy listening to the sound tracks and their fan songs. *EXEC_COSMOFLIPS*/ by KOKIA might be the most famous song from the series. It was featured as the BGM of many famous AMVs and MADs. I also love the duality between *EXEC_over.METHOD_SUBLIMATION*/. and *EXEC_with.METHOD_METAFALICA*/. Their lyrics in combination is a good conclusion of the story of *Ar tonelico II*. Although many people enjoy their songs due to their ethereal and heavenly feeling, my personal favorite is actually *EXEC_SPHILIA*/., a very heavy-metal and emotional song. Aside from the official releases, there are many circles that make fan/doujin songs in Hymmnos around the world. *EXEC_SCRIPT_AMAKUDARI*/. by KAssemble is my favorite as it stays true to the spirit of Hymmnos. By the look of it, the song is written in... **JavaScript**???? But, if you are curious enough, try writing down the lyrics, Eh-hem. From then on, you will find something truly interesting ;)

There are many good sound tracks from the *Ar tonelico* series as well. *BASARA* by Daisuke Achiwa is the banger of their 3rd/4th Hymmnos album. It is also the music of one of the most famous beatmaps from osu!.⁴ *Planet Gene* from hymmnos concert side.蒼～ is also very beautiful and soothing. It might be the music to conclude the trilogy. Aside for that, *Tsuioku no Michishirube ~ Sono ni* and *The Moon Dwelling Demon* are the hidden gems I found lately.

As a gamer/game developer, I would highly recommend you looking into the *Ar tonelico* trilogy. The developers put a lot of effort in their game and tried their best to create something truly artistic, beautiful and inspiring.

eralogos

1. <https://www.bilibili.com/video/BV1js411f7jY>
2. <https://hymmnoserver.uguu.ca/index.php>
3. https://artonelico.fandom.com/wiki/Ar_tonelico
4. <https://osu.ppy.sh/beatmapsets/13019#osu/54708>

INSPIRED BY JUMPING GOSLINGS AND THAT ONE HACHIWARE PANEL



enjoy.

sharpenyourforks

MC/DC BRIDGE X M3/MC BRIDGE EROTICA (1/4?)

DEDICATED TO MY TWO FRIENDS WHO ACTUALLY WANTED THIS AND A PRINCELY KNIGHT WHO SAID REAL FANFIC IS ONLY SMUT (AND IS ABOUT TO REGRET IT)

To MC/DC bridge, the last thing he could remember was counting backwards from ten on a cot.

Slowly opening his eyes, he found his head resting on a pillow and his lightly clothed body shrouded in blankets. From both sides, the cloudy floor masked the open, cool air, but looking up, he could see both the dusky sky and the face of M3/MC.

“Oh, you’re awake! I’m so glad you’re okay, DC,” she muttered.

Slightly disoriented, MC/DC slowly pushed his torso off the stratus mattress, accidentally poking new holes through the clouds with his bare hands. M3/MC watched as the blankets fell off DC’s chest, revealing his sheer grey undershirt and tan, toned arms.

Gazing down the holes, MC/DC could see some big, familiar buildings and lush grass about a couple of kilometres away. He shuddered, then looked back at M3/MC’s glassy eyes.

“M3, where the hell are we? Why are we floating above DC Green?” DC bridge questioned.

“I’m not sure, D. I woke up beside you about ten minutes ago, and my first thought was to keep you safe while I figured it out. I figured out nothing, by the way.”

This explained the satiny navy camisole and shorts that M3 bridge was wearing, as well as the comforting tight tuck in the sheets earlier.

MC/DC threw the comforter off of his lap, revealing his loose red boxers on top of his husky thighs, and fully pushed himself up off the clouds. All around them, scattered wisps filled the horizon, but behind DC, there was a glaring yet inviting luminescence.

“Do you think we should go towards the light?” M3 bridge interrupted, invading the cool silence. She was still sitting and gazing at DC’s back.

“I think so, M3,” he responded, turning to see M3’s curious eyes crawling down his body. “Ah, let me help you up.”

DC offered his hand, and M3 accepted. His firm grasp tugged M3 up on her feet, almost eye level with DC. He couldn’t help but look down at M3, down her supple neck and sharp collarbones to her décolleté. Looking past her shoulder, his clasp turned more into a squeeze, yet M3 still held on. Their deep, warm embrace didn’t unlock as they carefully sauntered to the unknown brightness.

For the first few minutes, a comfortable silence flooded the conversation. For them, just enjoying each other’s energy was one of their pastimes, but now, it was terrifying to keep

up. Both of them were fixated on the other bridge and acting normal, as if everything was normal.

“So... how do you think we got here?” M3 wondered aloud.

“I’m not sure; the last thing I remember is counting down after they injected anesthesia.”

“Huh, I remember that too. That’s odd.”

“I agree, weird. Why were you sedated?”

“Spinal fusion, to correct my lordosis. It felt like people were walking along my back every minute, but now I feel much better. You?”

“Lung transplant.”

“Oh my goodness, what happened?” M3 stared concernedly, reaching her hand out to gently rub MC/DC’s arm. She could feel the slight bulge in DC’s bicep.

“I don’t know, breathing became harder and harder until it was truly unbearable. I couldn’t deeply inhale without panting soon after. I’m okay now... well at least, it seems,” DC bridge said, his heart pitter-pattering in harmony with the wind.

“That sounds so horrific, I’m so sorry you went through that, D!” M3 muttered, releasing her hand to clutch DC’s arm like a pillow and laying the top of her head along the peak of his shoulder. Her long auburn hair grazed DC’s elbow, reminding him to look back at M3. DC laid his head on top of M3 as they strolled towards the light in the quiet comfort of the clouds.

After a short ten minutes of walking hand in arm, they could see the source much clearer now. In front of them laid an expansive, pearlescent staircase with polished balustrades, slightly obscured by the fog. As the stratus faded, a set of fenced, golden gates remained, glimmering in the fading sunlight. M3 pulled her head back from his shoulder and processed the view, while DC stared in mild shock, mouth agape.

“I had a feeling we’d be in heaven, but I think this confirms it. This is a lot to take in.”

“I agree, but I didn’t expect heaven to be so beautiful. When I think of heaven, I think of life after death—”

They stood in silence for a second or two before M3 finished realizing the truth.

“Wait, are we dead then?”

“I guess so,” DC huffed.

"So, we died? I died on the operating table? We're dead???" M3 shrieked, riding a wave of numbness before a tsunami of sadness crashed in her. She tried to hold back her tears, but rivers flowed down her eyes as she bitterly reflected on life.

"I had so much life left within me, and it's all gone? I barely lived, and the one time I prioritize myself, this is what happens. This is all so unfair!" she cried, her knees buckling and her falling quickly onto the plush floor, bursting two holes in the clouds.

Before M3 bridge could tumble down, DC pulled her back up from her torso and deeply clutched her smooth, almost limp body in his arms.

"M, M, it's alright. It'll be alright." DC whimpered, warmly rubbing M3's supple back. He tilted his head towards M3's forehead and kissed it thrice.

"We'll be fine," he whispered, now embracing M3's temple. Slowly but surely, her sobs got quieter, transitioning to sweet murmurs the more DC caressed her back. She wiped away her tears and looked back at his soft eyes and endearing cheeks, mouthing something under her breath. DC gazed at her, raising his right eyebrow, so she decided to repeat herself a bit louder.

"Kiss me more," she mumbled.

Dollar Store Person

sorry in advance for next 3-4 editions, either for scarring you or blessing your eyes



THAT UNEMPLOYED FRIEND ON A TUESDAY

IT'S A LARGER POPULATION THIS YEAR THANKS TO THE GLOBAL ECONOMY, BUT HERE'S WHAT WE DO:

- Do PD. No one is happy about this
- Make YouTube videos with under 200 views
- Go to the library!
- Code probably (I'm not in CS or Math, but love y'all)
- Watch Sinners in IMAX
 - It's such a good film, 10/10, gotta watch
- Make magazines! (I'm making a year in review magazine for 2025, based on my 2025. I did one for 2024 and everyone* loved it)
 - *everyone meaning my friends and family
- Touch grass. Not me, but a friend does
- Make cool art and share it on Instagram
- Tell your friend to break up with her emotional man child of a man please girl stand upppp no one likes him!!
- Text your ex-situationship too often
 - HE'S REALLY SWEET AND FUNNY OKAY
- Listen to jazz and try to convince an AJR fan that their music taste sucks
- Play Marvel Rivals with your friends and crash out over an Emma Frost farming you
- Read a book in public
- Spend money you don't have
- Play Minecraft and build a city
- Make a music video using only stock footage
- Write for **mathNEWS** (UW exclusive)
- Call your mom and tell her about the price of golden loaf cake at No Frills (she's just as appalled as you are)
- Light a candle from Bath and Body Works (they should sponsor me specifically, I have so many)
 - Top scents are their Pineapple-Mango candle, and I have this lavender vanilla one in my room, it's very soothing
- Complain about society
- Go to the club, and realize you'd rather be at the gym
- Make 3D art on your iPad
- Volunteer at Goodwill
- Find a book series you read as a kid and realize how it shaped your life
- Make your own font that's graffiti inspired
- Play Hades while waiting for Hades 2 to release fully
- Support local artists
- Go down a Wikipedia rabbit hole learning about Constantine
- Embrace the feeling of guilt
- Read Undertale fanfiction
 - That's just me, methinks
 - I've actually been on a Hobbit fanfic kick actually, thanks for asking
- Hate the French while loving Paris because you and your people were there (iykyk)
- Doomscroll and never get that time back
- Do the dishes (dread)
- Pirate Adobe Software because they're an evil company
- Call your engineering friends nerds
- Sleep

Jochemist

That unemployed friend on a Wednesday:

- Apply for jobs
- Cry

AS IF TORONTO PEARSON ISN'T BAD ENOUGH — GOOD LUCK GO-ING OUT

A DESPERATE CRY FOR HELP

As the largest and busiest airport in all of Canada, Toronto Pearson served some 46.8 million poor souls in 2024. And as if the abysmal flight delays, endless wait for your checked luggage and the dysfunctional customs are not enough for our victims across all of Canada, getting out of Toronto Pearson is also a nightmare—almost as if the airport itself is your clingy ex.

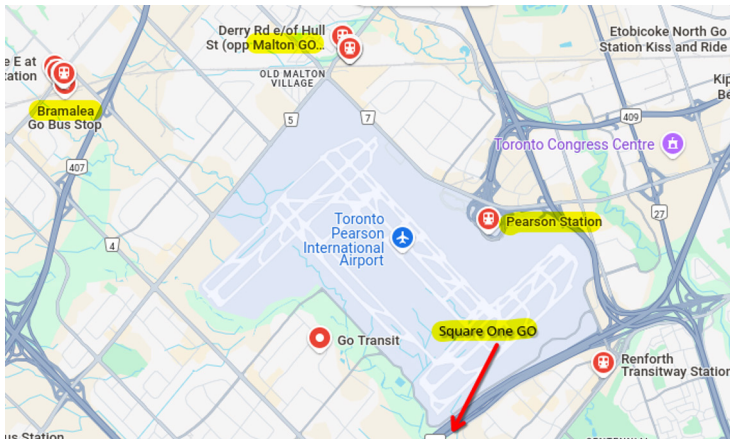


FIGURE 1: THE GENERAL LOCATIONS OF MAIN GO TRANSIT HUBS NEAR TORONTO PEARSON

First, let us consider the way out to Union Station. At least it seems like a reasonable-ish breakup with Toronto Pearson. You either spend an exorbitant amount of money (~\$12) for a quick-and-easy breakup on the UP Express, or you spend your time in a 1-hour kerfuffle on the TTC Rocket & Subway. Neither is ideal but at least you have some reasonable options.

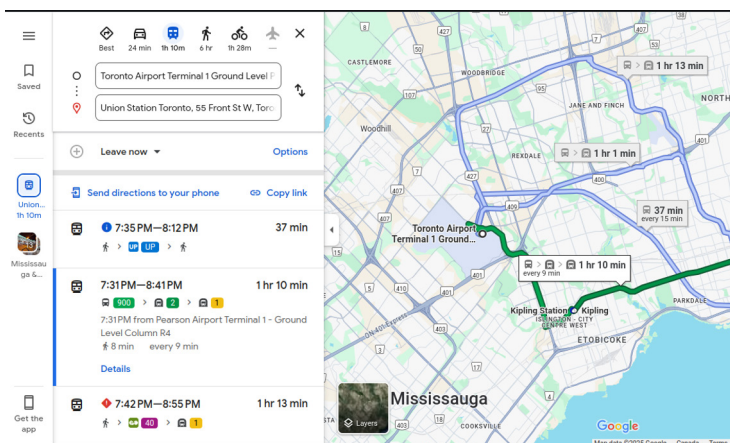


FIGURE 2: TRIP PLANNING FOR UNION STATION

Of course, solutions are on the way—if only you are willing to believe in the Eglinton Crosstown (West Extension Extension, eventually, maybe in your children's lifetime).



FIGURE 3: EGLINTON CROSSTOWN WEST EXTENSION PLANS

But it only gets worse from here. Consider if you want to be on the GO, say, a KI Train or MI Train. Well, you're out of luck—big time. Pearson-chan is severely disappointed at your suburbanite self.

Suppose you want to take a train at Malton GO on the MI. Consider waiting up to 20 minutes for your connection.

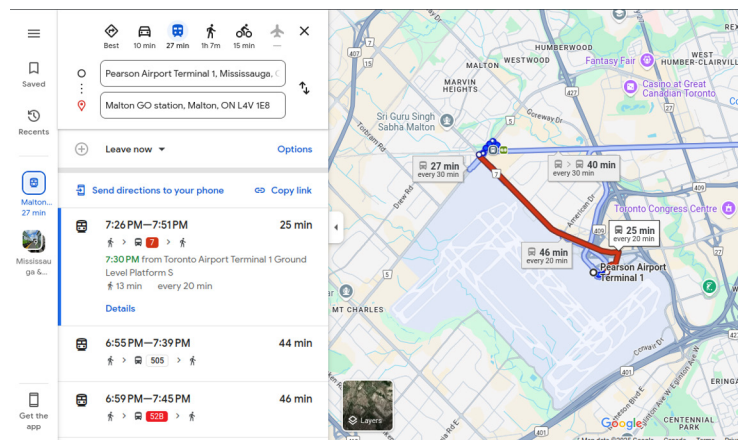


FIGURE 4: TRIP PLANNING TO MALTON GO

You have only yourself to blame for living in Milton, I suppose.

Alternatively, you could be heading towards Square One or Richmond Hill Center (or Hwy 407 Terminal perhaps). Good luck catching the 40 every 40+ minutes. How fitting. Sometimes the 94 comes to rescue you, but you'd do well not to expect anything from her temper.

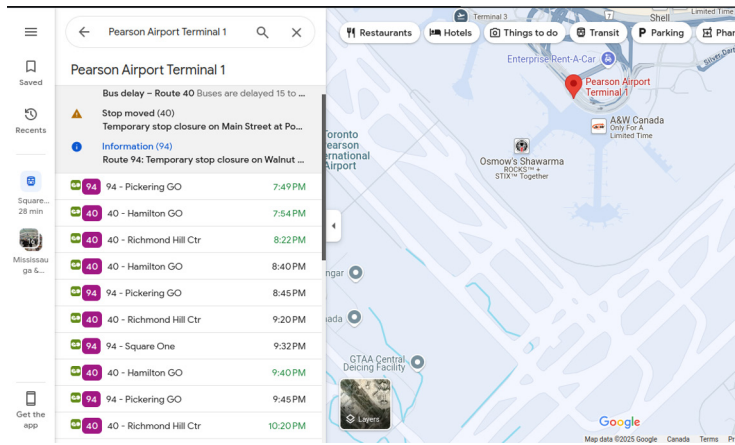


FIGURE 5: BUS SCHEDULE FOR GO 40 AND 94 TOWARDS RICHMOND HILL CENTER OR SQUARE ONE

Alternatively, you could be heading to Bramalea GO (perhaps to Kitchener-Waterloo). Well, Pearson-chan is certainly not pleased with your choice of housing (Skill issue). Expect 30-minute frequency of connecting trips via the 115 Brampton Züm for a brief trip to the edge of the airport.

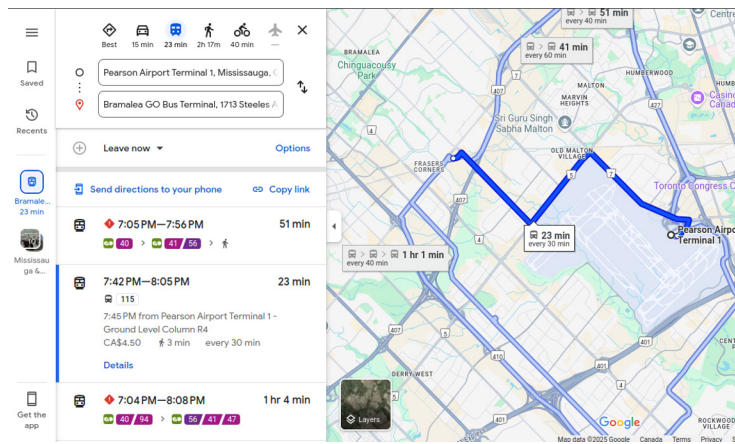


FIGURE 6: TRIP PLANNING TO BRAMALEA GO

Perhaps you should have chosen a connecting flight to the Region of Waterloo *International* Airport instead, with many connection flights out to *International* destinations such as Cancún, Orlando, Fort Lauderdale, and ... yeah.

For a questionably self-respecting partner, Toronto Pearson certainly does not hold back in clinging on to you. (Like a good obsessive Yandere who takes your luggage and your connecting flight as hostage I suppose. This would be a really good opportunity to insert an anthropomorphization but unfortunately, I don't have one.) However, while fixing Pearson-chan might be a futile effort, maybe there is hope, with GO's recent expansion, to take us in her embrace.

The current state of Pearson Airport connection via GO is pathetic, to say the least. While other cities boast multiple train lines (Tokyo Narita) or direct bus links towards almost every direction in 15-minute intervals (Hong Kong), GO can surely do better. Is a dedicated, 10-minute frequency service between Bramalea GO and Pearson T1, or Malton GO and Pearson T1 really too much to ask? (Note: Renforth Transitway Project is covered under Eglinton Crosstown, coming soon near you.) Surely, if GO is to entice people to Toronto Pearson (why, oh why?) without the hassle of Airport Parking, (a match made in heaven for the suburbanites!) such a service to cut down on "the last kilometre" is surely feasible, and one solution that does not require another fleet as you would with a new route.

Please, GO Transit-tan, save us. I don't want to stay in Pearson-chan's embrace anymore.

RobbotC

PIERRE POILIEVRE ANNOUNCES RETIREMENT FROM POLITICS TO PURSUE NEW CAREER



Dick Smithers

HI

meow meow meow :3

m6pan

SECRET LEGEND

LANGUAGE OF TUNIC

Tunic (2022) is a love letter to that time you bought a video game second-hand but you couldn't read any of it, and all you had were a few legible words in the manual. It's also objectively one of the coolest video games of all time because of the way it recreates that experience. **Spoilers ahead!**

The game has pages of an in-game manual scattered around the world for the player to collect and read, serving as knowledge progression. But, nearly everything in the manual and game is written in a special script, dubbed "Trunic." At a glance, it's quite hard to decipher, due to both its visual homogeneity and complexity. This dissuades attempts to decipher the language, and instead encourages inferring from the few given regular words, illustrations, and written annotations. It is readable though, and it is really quite fascinating.

Trunic is essentially phoneticized English. Every word is constructed out of one or more consecutive glyphs, each representing a phoneme, or sound, of the original word, with horizontal lines indicating individual words. Every glyph is a frame consisting of a five line outer vowel portion and a six line inner consonant portion, its entirety resembling a rectangular prism or hexagon. The presence or absence of different lines then represent eighteen vowel sounds and twenty-four consonant sounds. Put together, consonants are pronounced first, but if there's an empty dot, the vowel is first instead, totaling to twelve standard strokes per glyph. Which means, hypothetically, any glyph can be represented with anything that can store twelve bits.

Obviously, what comes to mind is the pentatonic arpeggio (five specific ascending or descending notes of an octave). Dubbed "Tuneic," phonemes are instead constructed from the presence or absence of music notes in a two octave pentatonic arpeggio, the lower six notes mapping to consonants and upper five mapping to vowels, with the empty dot represented by whether the arpeggio is ascending or descending. However, individual lines of the glyph don't directly map onto individual notes, as the combinations are assigned differently, along with requiring a root note to determine the remaining notes' relative positions. Nevertheless, pentatonic arpeggios are compositionally versatile, so messages are hidden, in plain sight, all over *Tunic*'s soundtrack and sound effects, acting as secret lyrics and dialogue.

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↑←↑→↓→

What's my favourite menu item? I'd have to say it's the sausage biscuits for breakfast.

PROF. JEFFREY SHALLIT

A STEEPLE AT 22ND AND MISSION

i am not religious
 but in matthew 16:18, jesus says
 “on this rock I will build my church”
 not provided: a framing diagram
 not provided: a list of materials
 the carpenter says “i will build my church”
 and to interpretation leaves the rest
 in the mountain valleys of eastern québec

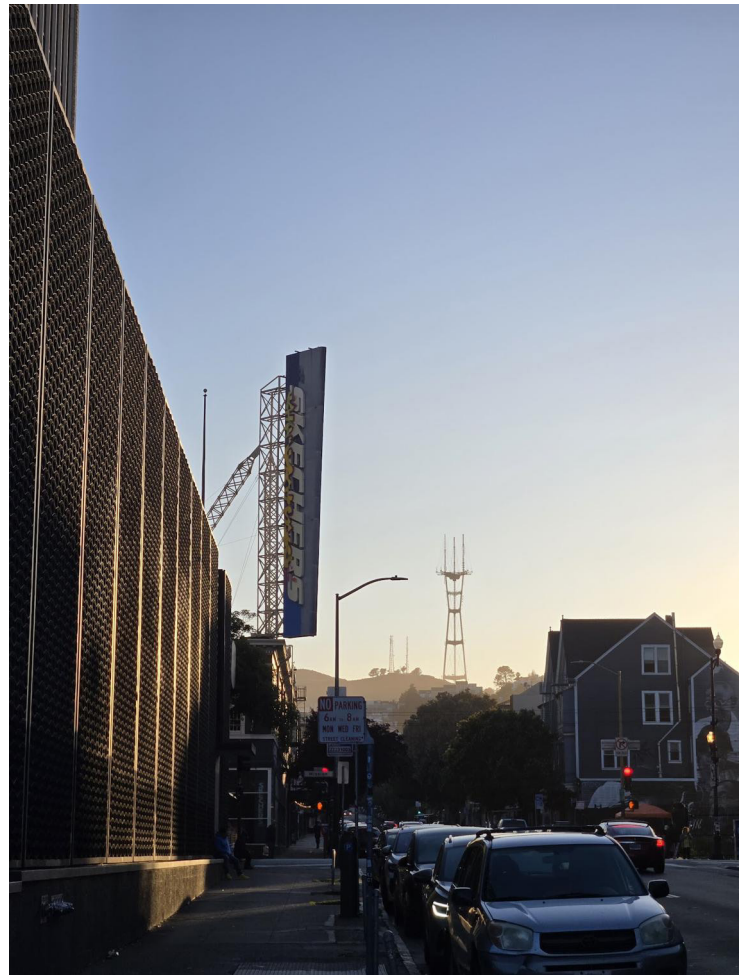
silver steeples can be seen
 radiant shards of the morning sun
 from untold miles away
 each one identical, for we invented a pattern
 and named it:
 doctrine
 it is our human invention
 it is the only way

some defy it
 in the mission district
 (san francisco)
 an enormous steel frame
 of crosshatches polar quartz
 and a glass front facade
 cleaned, pristine
 seem to be a market, but name themselves: church
 though i’ve never seen a service
 the front foyer holds the sign of a coffee bar
 (in millennial tech typeface)
 and the second floor contains a sound system
 of which Modern Languages only dreams
 (men sleep on nearby sidewalks)
 at the corner of the altar
 a wanderer can find communion
 in prepackaged plastic
 15 mL of wine
 1 cm³ of bread
 the mass production process
 ensures no germs are shared

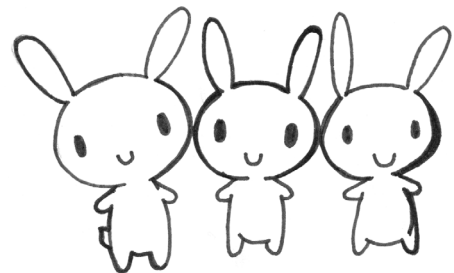
some defy it
 in the mission district
 (san francisco)
 the chapel spire of la misión de san francisco de asís
 stands in a forgotten corner
 unremarked
 but on mission street, wrinkled grandmothers sell pupusas
 (beside the food bank)
 broken bread and
 wine is plentiful between the bars and taquerías
 (is it coincidence?)
 the district shares the chapel’s name
 there is no chapel building
 but at 22nd and mission, high above the roofline
 the sign of a skechers store scrapes the sky
 its steel support structure
 rusting from years of use
 its faded paint

overlaid by an ambitious and gaudy graffiti tag
 an artist challenged death
 to mark upon the blue
 the steeple salespeople tell me
 a steeple is only to draw your eyes to heaven
 and while there is no silver steeple
 each time i walk through the evening light
 the sketchers sign makes do

is greater heaven found above it
 in unblemished sunset sky?
 or is it amid the drug addict
 unconscious, just below



molasses



PROMISED

I always hope that it won't happen again, that nothing will keep her from being here with me. But this morning, she got up, went downstairs—I followed—and after doing her chores, she was gone. Just like that. Just like yesterday. Just like the day before. A cycle of betrayal.

Of course, she ended up preparing some breakfast for me first, but I didn't feel like eating, the food wasn't going to be that good anyways. She insisted that I should eat at least something, and had the audacity to just push the plate closer to me. But I had no desire to do so, she was leaving, and I couldn't do anything to convince her to stay. I was so upset I didn't walk her to the door, and now I'm regretting it a bit, I should've made the most of the time we had.

But she will come back, she always does, she *promised*.



It feels like it's almost time for her to get back. The sun disagrees. But the sun is wrong. I couldn't be more bored. I already ran through the house with the loud one, threatened birds from our backyard, and even reorganized her table. (There were way too many things on it, books, a collection of notebooks, papers... now it's not as cluttered!) I also tried to nap, but wasn't very successful. Sleep refused me. I pressed my face into her pillow's fabric. Almost—almost—her. But almost doesn't stop my ears from twitching at every far-off engine.

Instead, now, here I sit, by her window, looking, waiting. What does she even do out there? Is she safe? How do I know if death is not breathing down her neck? Many times, she tried to explain it to me, but I really don't get it. Why can't she stay with me forever? She says she loves me, but then always leaves.

People come and go, faceless and forgettable. I watch the cars, growling and coughing, they run through our street, never slowing down, never stopping, it's never her.

It's not that bad though, waiting here, I mean. The sun's warmth hugs my skin, as if saying I shouldn't worry, and before I notice she will be back. My eyelids droop, heavy, so heavy, but I won't sleep. Not until I hear her keys in the door.



I'm awake with the familiar sound of the front door opening. She's here! I get off the window, go past the bedroom door, fly down the stairs, and am face-to-face with... him. He is okay, but he's not her. I don't have time for this. Ignoring him, I turn around and make my way up the stairs, slowly, each step seeming longer and harder than the other.

Now the sky is a beautiful orange colour. She is usually home by now, why isn't she?

I decide the next best thing I can do is ask, or rather complain to him. If I'm miserable, then he should be too.

I find him on the sofa, looking up at the big screen. He looks relaxed, but that won't last long... Slowly and quietly, I crawl over the cushions behind his head. Then I breathe in, and as I exhale, I start yelling. He tries to ignore me at first, but I don't want to stop, I will not stop. Where. Is. She.

He gets up, walks near the fridge and calls me, is it more food that I want? I stay at my place. So then he walks near the backyard's door, and opens it, do I want to go outside? Maybe, maybe then I would be able to bring her home myself, but we both know I'm terrified of the world of things out there, I can barely stand to stay in the front yard. It's way too much noise, way too many people, and there are so many cars! It finally dawns on him:

"Oh! Yeah, she had to go to the supermarket," he says, "She's getting us some dinner, including yours."

As soon as he says that, it happens, I don't have to think, my feet take me to the door, before I can even register what's going on. She's here, she came back to me! But as I see light coming from the other side of the door, I come to a full stop. I shouldn't reward this type of behaviour, she was late, she made me worried, I shouldn't let her have it this easily.

The smile on her face tells me she saw me though, or maybe heard me, or both. I stay put. She gets closer to me asking me how the day was, I coldly turn my back to her, and make my way into the living room. Does she want to know though? How much I missed her? How bored I was? How worried about her she got me?

She drops her bags, exhales loudly, and walks after me. But I'm fast, if she gets closer, I can simply walk or run and she won't be able to—

It is then that she grabs me in her arms, catching me completely off-guard, so unfair! Is it that hard to play it clean? My ears make the shape of a "V," she laughs at this sight, putting me even closer. My body stiffens. Hers does too—just for a breath—before she exhales and confesses, her voice almost breaking, "I'm sorry, little one. I missed you so much today." And just like that, the fight leaves me. A rumble rises in my chest, warm and forgiving. Purring.

leah

13 doesn't exist.

PROF. ROB HACKMAN

LEARNING ABOUT SCIENCE

THE INTERNATIONAL YEAR OF THE PERIODIC TABLE (IYPT) EVENT AT THE UNIVERSITY OF WATERLOO

Last week, I visited the ongoing Periodic Table Project events at the University of Waterloo. New elements and periodic table updates are published every year, so I visit the event at least once every year.

I highly recommend the Periodic Table Project to students at the University of Waterloo! I especially encourage students who are interested in Chemistry to visit. The events are great! I suggest the events for two groups of curious viewers (adults only):

- One is for brushing up on skills. Quick: what is the newest element in the periodic table? Is it radioactive? What is the element being used for?
- The second is for an introduction to chemistry. Wait, there is an element named after Alfred Nobel, called Nobelium? Should this be the element Dr. Nobel is most known for? Why is this element so important?

Earlier, I visited the events with several undergraduate students. In this group repeat visit, I learned about the Historical Periodic Table with students in Year 3 of a Bachelor of Science program at the University of Waterloo.

Uniquely, the event is local to the University of Waterloo, one of a kind. The multi-display event is including new elements in the Periodic Table Project.

In an ongoing celebration for the International Year of the Periodic Table, as explained on the Periodic Table Project website (<https://uwaterloo.ca/chemistry/community-outreach/periodic-table-project>), the event favours long-session visits of several hours to multiple celebration sites, including the 2019 site of the IYPT, as well as updates since 2019.

The mission of the Historical Periodic Table, including the Periodic Table Project, is to celebrate “5000 years of human discovery” with an event visit that is as innovative as it may be “skimmable,” according to pop standards of design. The visit can take as little as under five minutes!

Strong in heritage value, an individual visitor’s engagement with self-guided tours is one of the world’s most transformative learning experiences at the University of Waterloo. Student and faculty membership at the University is required to attend.

E. Bernath

NO WIN IS TOO SMALL TO CELEBRATE!

I am currently deep into the weeds of turning my **mathNEWS** article *I am too lazy to come out as non-binary: so I wrote a whole essay. instead* into a stage play for the Ottawa Fringe. Happening June 12–22nd, 2025.

I hit a bit of block working on it where I realized that I had made the process of working on it stressful and unfun. I would constantly focus on all the things I needed to do but hadn’t done. This stressful mindset made me avoid working on it and just increased my overwhelm.

I was so focused on my perceived failures and I completely ignored all the wins, all the hard work I have done so far.

I am fully capable of putting on this show but I won’t work on it if I make the experience so unpleasant. Shifting my mindset from wondering if I can do this show to asking myself how I can help myself succeed was a game changer.

To get myself back on track I needed to celebrate my wins. All of them! No matter how small!

BeyondMeta

WHO KNOWS “CRIMINAL LANGUAGE” MEANS 私通 ???

So this term I’m taking Business Law. When the prof asked “You guys know what ‘criminal language’ means right?”

I barely nodded my head. I thought it would be criminal words just like “I’m gonna kill that person!!”

While the prof just explained “Criminal Language” is not considered as tort today because women are no longer considered property. Well, in what world this is related to criminal language??? So I just used the translator and

surprisingly found it is 私通 which means having secret communication with, or literally, “illicit intercourse.”

Well, as an embellishment, “criminal language” is obviously much more pleasant to the ear than “having an affair.” But isn’t it too tricky to understand?? lol

AKEIJIN

BONJOUR

gridCOMMENT 158.1

hi and welcome back everyone!!

i hope everyone has had a restful break :) today, we will be jumping right into it: the theme is "Shining Revelry," as in the booster pack from Pokémon Trading Card Game Pocket, the hit mobile adaptation of the Pokémon Trading Card Game for iOS and Android. i recently fulfilled my very pointless goal of completing all 523 battle tasks in the solo battles, so i've been spending quite a bit of time on the game, hence the theme. don't worry, this **gridWORD** is only an outlet for my personal interests when i believe it might be shared by a large number of other **gridWORD**ers. still, this **gridWORD** is very doable, regardless of level of pokémon knowledge.

this term's very first **gridQUESTION** will be: what are you looking forward to this summer? i'll go first: getting a gold card in pokémon tcg pocket. or an immersive. i'm very confident my luck will turn around (please please please). and, as always, please send your completed **gridWORD**, **gridQUESTION** answer, and a pseudonym to mathnews@gmail.com by **monday, may 26, 6 pm** for a chance to win a prize :3

merci beaucoup tout le monde,

spaghettiiinhalers

ACROSS

1. Cottontail's tail
5. For
8. Type of ANOVA
14. Pasty
15. "My Name Is Asher ____" (Chaim Potok novel)
16. Caucasian continent
17. Sicilian peak
18. Imitate
19. Operatives
20. Shiny Pokémon with the attack "Steam Artillery"*
23. The fox in Disney's "The Fox and the Hound"
24. Time to act
25. "____ the ramparts..."
27. Bird-to-be
30. Retro hairdo
32. Game ragout
34. Caviar
35. Open, in a way
37. Kind of pad
38. On the ____ (fleeing)
39. Chick's sound
40. Renter's paper
42. Unguent
43. Fat letters
44. Survive
45. Tapeworm
47. Medical research agency with recent funding cuts
48. Up to
50. Give up
51. Black bird
52. Dove's sound
53. "Holy moly!"
55. "Eureka!"
57. Shiny Pokémon with the attack "Plasma"*
62. Trolls

65. Mom-and-pop org.
66. Residence on Phillip St.
67. Spain and Portugal
68. "Like father, like ____"
69. Slangy term for 11-Down
70. Shiny Pokémon with the attack "Headbutt"*
71. Big time
72. McDonald's arches, e.g.

DOWN

1. Computer detail
2. Robert Prevost's faith, abbr.
3. Radius' counterpart
4. Sign of sorrow
5. Public square
6. Fulfills debt
7. Finished
8. Gossip
9. Shiny Pokémon with the attack "Pop Out Throughout"*
10. Ice cream flavor
11. Locale for Canadian world record-breaking roller coasters
12. TikTok-viral song by Rosé and Bruno Mars
13. Sycophant's response
21. "American ____"
22. Gives out
26. Irish revolutionary Robert
28. Masked man with a stick
29. Chan of Crazy Rich Asians
30. Lack of some metal
31. Like some fish
33. Fine fiddle
35. (???)?? ???
36. Grassy plain
41. Prevent

42. Shiny Pokémon with the attack "Crushing Spear"*
44. Shiny Pokémon with the attack "Aura Sphere"*
46. Smoothie berry
49. Campus orator
54. Accra's land
56. Life saver
58. ____ line (major axis of an elliptical orbit)
59. UN agency dedicated to aviation
60. Tune
61. Loosen, as a knot
62. AIDS cause
63. Attorneys' org.
64. Friend of Fr



Drop your **gridWORD** solutions off at MC 3030. And yes, we do award points for creativity.

A PERPETUALLY BORED mathNEWS EDITOR

1	2	3	4		5	6	7		8	9	10	11	12	13
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70							71				72			

Not many people give us the solutions physically, to be honest. Most people just email. We're always very excited when we get a real paper gridWORD!

lookAHEAD

SUN MAY 18	MON MAY 19	TUE MAY 20	WED MAY 21	THU MAY 22	FRI MAY 23	SAT MAY 24
	Victoria Day	Academic Standing Released Every Other City In BC Day	Co-op Cycle 1 Posting #2 applications close	Course selection period begins for returning students	National Taffy Day World Turtle Day MC's 57 th Birthday befuddled gets a cavity filled	
SUN MAY 25	MON MAY 26	TUE MAY 27	WED MAY 28	THU MAY 29	FRI MAY 30	SAT MAY 31
	mathNEWS 158.2 production night QNC 1502, 6:30pm Drop period ends		Eat Rocks Day		mathNEWS 158.2 drops befuddled's birthday Exam schedules released	

MEGALOPOLIS (2024) RUINED MY LIFE

I watched this movie with my high school friends when I was back home during Christmas. I have not been able to stop thinking about it since. It feels like a cursed tome; upon watching it you take permanent psychic damage and are haunted by visions every night. We quote it constantly. Any game with recourse gathering will inevitably result in us quoting the guy at the start of the movie who yells “CONCRETE CONCRETE CONCRETE, STEEL STEEL STEEL!” Every time I see a little boy, I think about the twelve-year-old from Megalopolis who domes Adam Driver in the head on orders from Shia LaBeouf. Upon my deathbed, when my family is surrounding me, my children holding my hand, and I feel the pull towards the light, I’ll whisper: “I’m going back to the cluuuub.”

This movie permanently altered my brain chemistry.

Dick Smithers

BECOME A MATH AMBASSADOR FOR 2025–2026!

Are you interested in representing the Faculty of Mathematics and helping future Mathies learn about Waterloo?

As a Math Ambassador, you’ll have the opportunity to make a real impact on someone’s university experience, connect with others who share your passion, and so much more. Plus, you’ll earn some cool swag, enjoy free food, and gain valuable skills.

Apply now to be a Math Ambassador! Applications are open until *Sunday, June 1st* at 11:59 PM!

Math Undergraduate Recruitment



otherNEWS is made technically possible by club executives of the Math Faculty.

I say “technically” because if they had sent us more news this week, this box wouldn’t be here.

THE mathNEWS EDITOR WHO PUTS THE “NEWS” IN mathNEWS