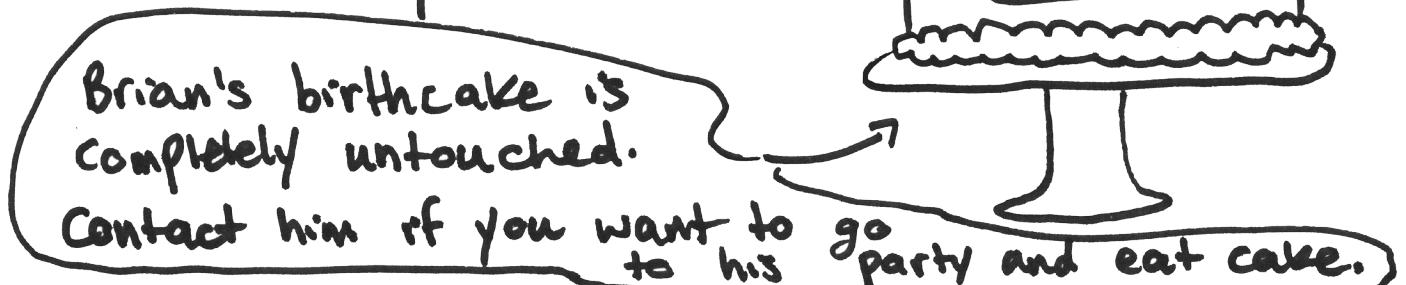


Happy $\pi + 2$ day!



... also happy belated birthday Brian!



"WHAT WOULD YOU PUT THROUGH **mid**iNEWS?"

mathNEWS'S OFFICIAL TEXT-TO-MUSIC CONVERSION SOFTWARE

I regret to say that I have wronged you, oh ye faithful **mathNEWS** readers. In my rush to finish **mathNEWS** 136.4 I, in my haste, in my pride, forgot to list π day in the **lookAHEAD**.

There is not excuse I can make, no penance I could perform, to absolve myself of this egregious sin. So, I submit myself to your justice, oh honourable **mathNEWS** readers. I trust that you will be fair in meting out punishment. May God have mercy on my soul.

Though, that being said, the relationship between the **mathNEWS** editors and their readers is a two way street. My own transgressions aside, despite all four **mathNEWS** editors being in the office today, toiling on this very issue, not one of our so-called readers nor contributors had the common decency to bring us any free pie. In light of this I am commuting my own sentence, as I think we can all agree: there is no punishment worse than going without pie on π day.

All that aside, **mid**iNEWS is legitimately my new favourite thing ever. I gushed about it last issue, but its creations are truly works of genius, especially when Vice Mitt started modifying it to produce more than just piano notes. You haven't heard true beauty until you've heard **mid**iNEWS serenade you with a full string quartet.

Also, St Patrick's day is coming up! I had originally planned to write a giant article of all my craft beer recommendations, cause there's enough to fill sever. Yes I'm that much of a snob, and proud of it. Unfortunately, I didn't have time to write the full article, as it turns out that editing this here paper is *somewhat* time consuming, Who would've thunk it.

Seeing as I need to fill the column anyways While we're here I may as well list off a couple of more notable ones: Monty's Aged Ryed Ale by Old Tomorrow, a beer infused with rye whiskey. By far my favourite beer, there's really nothing else like it. Also the can has a picture of John A. MacDonald on it, which is extra cool. The Prodrumus from Omnipollo is a close second, a "chocolate chunk graham cracker imperial stout." It is ridiculously rich, not to mention stronger than some wines.

Alright I ran out of things to ramble about. Shoo.

swindLED
Editor, **mathNEWS**

swindLED
Editor, **mathNEWS**

- ITSH | 10 minutes of random Spongebob quotes.
- ME | Donald Trump's Presidential Campaign Announcement, and the third FOX News and GOP debate.
- BMONEY | The Episode, by Snoop Dogg.
- ZETHAR | 聒噪 [Editor's note: this took 30 minutes]
- MELISSA | Your mom.
- SIGSEGV | Run something through **mid**iNEWS, change the file extension from .mp3 to .txt and run it through again. Repeat ad infinitum.
- SOVIET CANADIAN | The entire "Wheel of Time" book series.
- THEODORE BEAR | Steamed Hams and the script to "Star War: The Third: Backstroke Of The West".
- WALDO@<3.LE-GASP.CA | My class textbooks... who knows, it may help with learning!
- VICE MITT | Ingredient list of a Twinkie.
- LAGGING | The source code to **mid**iNEWS.
- SWINDLED | The Subspace Emissary's Worlds Conquest (Super Smash Bros. fan fiction) aka the longest single piece of English literature.
- EXTROVERTED | The Madoka Magica Theme song.
- GEORGE LAMBROU | "School credit for **mathNEWS**" 1000 times..

ARTICLE OF THE ISSUE

This week's Anti-Article of the Issue is Vice Mitt's A Statistically Proven.... Vice Mitt's article with a really long name I don't feel like typing out. After several rounds of rigorous review, I regret to say that the article was rejected by the **mathNEWS** review board with the comment "too meta."

This week's *actual* Article of the Issue is NoSurf: Turning the Internet Into a Tool, Not a Compulsion. Congratulations to life = Σ retractions! Your winnings include a fully-paid stay in the **mathNEWS** office between the hours of whenever I decide to show up to when I get hungry and go home.

You can also come pick up a \$25 gift card to Conestoga Mall, I guess. I don't know why you'd want that though, the **mathNEWS** office tourism is really where it's at.

Forget Spotify, **mid**iNEWS is how I get my music now.

ANUJ OPAL, **mathNEWS** EDITOR FOR WINTER 2018
ALONG WITH ANGELA LE, GEORGE LAMBROU, ZISHEN QU

mathASKS 136.5

FEATURING PROF. STEVE FURINO

WALDO@<3.LE-GASP.CA: HOW DO YOU FEEL THE IMPACT OF ONLINE LEARNING IS AFFECTING MATH COURSES? WOULD YOU TAKE AN ONLINE COURSE NOWADAYS?

This question is worth a small book for an answer but I'll be short. I will interpret "online learning" to mean "digital assets that support learning" as distinct from taking a course wholly online. When the digital assets replace a textbook students get a much less expensive (0% – 40% of the price of a textbook), portable, comparable learning resource that can, in addition, support the Testing Effect and mitigate the Dunning Kruger Effect. Look those Effects up—online. And relatively few students now buy textbooks which can dramatically impair their ability to study. With digital assets the university gets data on how well certain teaching assets work and can iteratively improve them. The net effect can be, no guarantees, more accessible, less expensive material and better learning. And this doesn't even consider our ability to reach out and touch the world: better teachers through the Masters of Mathematics for Teachers, improved capacity in actuarial science in Indonesia, and hopefully soon, support for teaching and learning mathematics in Africa. Would I take an online course nowadays? I both teach and take courses online. I am currently learning about classical music, just finished Baroque operas. I think my next course will be on plant biology.

THE EUROBEAT-'EM-UP: WHAT HAS MATH 135 TAUGHT YOU?

A wondrous amount but most prominently that we have an incredibly dedicated, committed and able entering class.

ZETHAR: WHAT IS YOUR MOST MEMORABLE INCIDENT OR ENCOUNTER DURING YOUR TENURE AS ASSOCIATE DEAN?

The Associate Dean's job has privacy requirements similar to the CIA's. If I told you I would have to kill you. But I will say there were very humbling moments when I saw students make heroic efforts to overcome incredibly difficult circumstances. I have a favourite speech by Bobby Kennedy tucked into my wallet. After listing the world's ills, Kennedy states "The answer is to rely on youth." My term as AD certainly affirmed my tremendous optimism in your generation. [Audio and text are available at <http://www.americanrhetoric.com/speeches/ekennedytributetorfk.html>]

THEODORE BEAR: ARE YOU SECRETLY A BEAR?

See earlier reference to CIA.

GENERIC AUTHOR: I HEARD THAT mathASKS WAS YOUR IDEA; IS THIS TRUE? AND IF SO, WHAT DO YOU THINK OF IT ONE YEAR LATER?

George Lambrou *tells me* that it was my idea. I have no memory of this (is that a consequence of my advancing age?) but I do think the **mathNEWS** staff has pulled it off brilliantly.

LIL' J.J.: CAN YOU GIVE ME A 100 IN MATH 135?

My Swiss bank account number is 314159265. No.

G-UNIT: HOW HAS YOUR DAY BEEN?

Great. Thank you for asking.

NEED_TO_PEE: WHAT IS ONE OF THE BIGGEST MISTAKES THAT STUDENTS REDOING MATH 135 MAKE? WHAT DO YOU WISH MATH 135 HAD TIME TO COVER?

I think the same mistake is made by those taking MATH 135 for the first time and those retaking MATH 135: not *doing* enough proofs. Reading. Highlighting. These are not the same as working through an existing proof line by line asking and answering "Why this?" as many times as possible. And then attempting to prove other statements on one's own.

What do I wish Math 135 had time to cover? I'd like to spend time on very different areas of mathematics and show that the techniques in MATH 135 are powerful across widely disparate subjects. I'll even nominate a few. Shortest path problems. Cardinality of infinite sets. Elementary proofs in group theory.

SWINDLED: WHAT'S AN INTERESTING PIECE OF MATH TRIVIA YOU'D LIKE TO SHARE?

Because I teach a history of mathematics course and talk about Bill Tutte's cryptographic successes in WW II, I'll share a little piece of cryptographic trivia. The Battle of Midway, a pivotal victory for the Americans in the Pacific theatre, almost didn't happen. Despite the breaking of the Japanese naval code at that time, cryptographers were regarded with suspicion by most naval commanders and their work was ignored or denigrated. In this specific instance, Admiral Chester Nimitz believed the geeks over the sailors and changed the tide of war in the Pacific.

GEORGE LAMBROU: HOW CAN I RETROACTIVELY TURN mathNEWS INTO AN ONLINE COURSE EFFECTIVE WINTER 2017, AND RECEIVE SCHOOL CREDIT FOR IT BOTH THEN AND NOW?

My Cayman Islands bank account number is 271828182. You can't. But I do love **mathNEWS**.

Enjoying mathASKS?

Thank Professor Furino. It was his idea.

A **mathNEWS** EDITOR WHO BELIEVES
IN CREDIT WHERE CREDIT IS DUE

profQUOTES 136.5

PART -eⁱⁿ

CS 246: NOMAIR AHMED NAEEM

“ I'm going to see you at the exam, or at least I will see some of you at the exam, because some people are going to get sick right now.

“ I'm talking back in 2002, 2003 when I used to use Java, because I didn't know better.

CS 360: RICHARD TREFLER

“ If I want to write down a [pushdown automaton], I have to write down this thing with too many letters.

“ A Mac is not the same hardware as... uh... are there other machines?

“ I did some, like, math stuff.

CS 450: ANDREW MORTON

“ [Student stretches, appearing to raise his hand.] No? Just stretching? That's dangerous.

“ 7 out of 8 of us got this flu. It was really great.

“ Prof: Should we take a break or end early?
Student: End early.
Prof: Break, okay.

“ Whoever came up with this probably got a patent out of it and made their company really happy. I doubt they got any extra money out of it, though.

“ Again, this is taken from Agner, the Norse god of compilers.

CS 488: GLADIMIR BARANOSKI

“ I'm not here to be nice, but I will be fair.

HIST 216: IAN MILLIGAN

“ Someone should edit the University of Waterloo Wikipedia pages so there's a direct link to Canada Goose.

“ It's like a VCR — wait, VCRs don't make any sense for you.

“ If you ever get into research, that's what your life will be: playing with bureaucracy.

“ My formal mathematics education ended gloriously in high school.

“ The exam is at Friday the 13th, which is scary. Yeah, that sucks.

SEQUENTIAL MATH STRIKES AGAIN!



Ever wondered what bridge vandalism has to do with vector calculus? Look no further! With a fresh comic and new characters in tow, Sequential Math returns to the pages of **mathNEWS** to deliver a historical take on vector calculus¹.

Apart from providing the history behind some math concepts², Sequential Math also presents core math ideas in a reader-friendly format. So far, concepts from multivariable calculus, logic, and linear algebra have gotten the Sequential Math treatment, which entails explaining rigorous math with equally rigorous drawings.

If there's one thing the Sequential Math team wants (other than world domination and possibly a book deal), it's to hear from you. Yes, you. No, really! You, with the head full of math concepts rattling around in a tangled mess just waiting to be straightened out with the stroke of a Wacom tablet pen—what concepts would you like explained? To know more about? To be taught by anthropomorphic creatures? Drop your ideas into the website's suggestion box!

To learn more about Sequential Math and to keep up with the latest news, visit the official website at <https://sequentialmath.com/> or follow Sequential Math on Twitter (@sequentialmath), on Tumblr (sequentialmath), or on Facebook.

And now, without further ado, you, dearest **mathNEWS** readers, get to read a limited edition print version of a comic! Enjoy!

The Sequential Math Team

1. Regular readers of **mathNEWS** might remember Sequential Math from **mathNEWS** 135.5.
2. OK, so far only vector calculus, but more are in the works!

The following comic and the Sequential Math logo are © 2018 Amanda Garcia and Giuseppe Sellaroli, all rights reserved. Reproduced with permission.

a brief history of vector calculus

Written by Amanda Garcia and Giuseppe Sellaroli
Illustrated by Giuseppe Sellaroli

Dublin, Ireland.

October 16th, 1843.

Brougham Bridge.

After years of unsuccessful attempts, Sir William Rowan Hamilton has finally made a breakthrough.



On this fateful day, I discovered quaternions.

Sir William Rowan Hamilton
(1805-1865)

Known for:

- Hamiltonian mechanics
- Quaternions
- Bridge vandalism

The mathematical community was skeptical of quaternions.

Quaternions are objects of the form:

$$q = a + bi + cj + dk$$

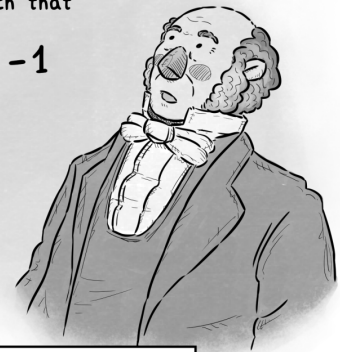
where $a, b, c, d \in \mathbb{R}$ and i, j, k are symbols such that

$$i^2 = j^2 = k^2 = -1$$

$$ij = -ji = k$$

$$jk = -kj = i$$

$$ki = -ik = j$$



Unlike the algebraic structures known at the time, quaternion multiplication is **non-commutative**.

$$\begin{aligned} (1+2i+k)(j-3k) &= j - 3k + 2ij - 6ik + kj - 3k^2 \\ &= j - 3k + 2k + 6j - i + 3 \\ &= 3 - i + 7j - k \end{aligned}$$

$$(j-3k)(1+2i+k) = 3 + i - 5j - 5k$$

Are you wondering what quaternions have to do with vectors?

The term **vector**, in its modern interpretation, was introduced by Hamilton in his study of quaternions.

Vector part of q , or $Ve(q)$

$$q = \underbrace{a}_{\text{Scalar part of } q, \text{ or } Sc(q)} + bi + cj + dk$$

Scalar part of q , or $Sc(q)$



(Hamilton was not known for his concise writing style.)

"A quaternion may thus be said to consist generally of a real part and a vector.

The fixing a special attention on this last part, or element, of a quaternion, by giving it a special name, and denoting it in many calculations by a single and special sign, appears to the author to have been an improvement in his method of dealing with the subject."

Quaternions paved the way for modern vector calculus through two major innovations.

1. The idea of the vector as a *mathematical object* in its own right, rather than three distinct components.

$$\vec{v} = v_1 i + v_2 j + v_3 k$$

A vector is a quaternion without a scalar part

Here i, j, k are interpreted as the unit vectors in the direction of the x, y, z axes

I am so proud of them!



2. The introduction of a *product of vectors* and of compact notations to handle commonly used expressions.

These quantities were known, but were expressed in this bulky component-wise notation

$$Sc(\vec{u}\vec{v}) = -(u_1 v_1 + u_2 v_2 + u_3 v_3)$$

$$Ve(\vec{u}\vec{v}) = (u_2 v_3 - u_3 v_2) i + (u_3 v_1 - u_1 v_3) j + (u_1 v_2 - u_2 v_1) k$$

As for the 'calculus' in vector calculus, Hamilton also introduced the *nabla* differential operator, which could be applied to scalars and vectors.

$$\nabla = i \frac{\partial}{\partial x} + j \frac{\partial}{\partial y} + k \frac{\partial}{\partial z}$$

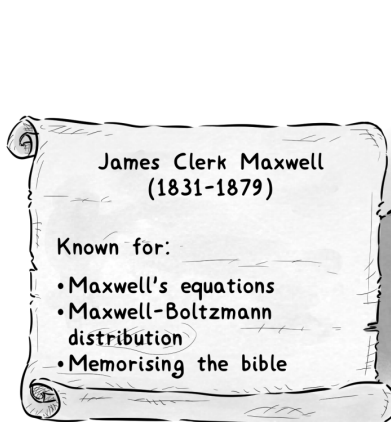
$$\nabla \varphi = \frac{\partial \varphi}{\partial x} i + \frac{\partial \varphi}{\partial y} j + \frac{\partial \varphi}{\partial z} k$$

Here φ is a scalar

$$Sc(\nabla \vec{v}) = -\left(\frac{\partial v_1}{\partial x} + \frac{\partial v_2}{\partial y} + \frac{\partial v_3}{\partial z}\right)$$

These quantities were central to Maxwell's theory of electromagnetism. He named them and provided their physical interpretation.

$$Ve(\nabla \vec{v}) = \left(\frac{\partial v_3}{\partial y} - \frac{\partial v_2}{\partial z}\right) i + \left(\frac{\partial v_1}{\partial z} - \frac{\partial v_3}{\partial x}\right) j + \left(\frac{\partial v_2}{\partial x} - \frac{\partial v_1}{\partial y}\right) k$$



"I propose therefore to call the scalar part of $\nabla \vec{v}$ the *convergence*."

"I propose (with great diffidence) to call the vector part of $\nabla \vec{v}$ the *curl*."

Despite being popularised by Maxwell, quaternionic vector analysis struggled for acceptance.

"'Vector' is a useless survival, or offshoot, from quaternions, and has never been of slightest use to any creature."

--Lord Kelvin

"Quaternions furnishes a uniquely simple way of treating *quaternions*. Observe the emphasis."

--Oliver Heaviside

"I think that it may be safely affirmed that in the majority of cases in this field the advantage derived from the use of the quaternion is either doubtful or very trifling."

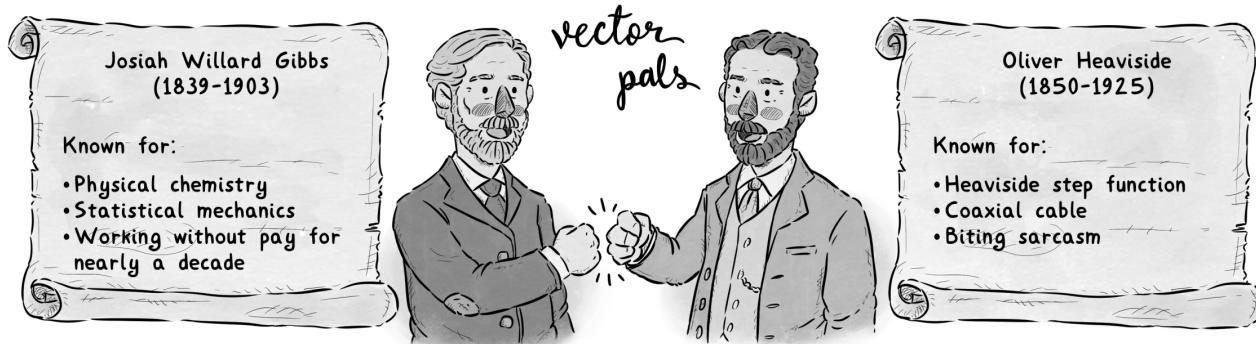
--Josiah Willard Gibbs

There were two main objections to quaternionic methods.

1. Some scalar quantities are unexpectedly negative, e.g. $Sc(\vec{v}^2) = -v_1^2 - v_2^2 - v_3^2 \leq 0$.

2. They come with unnecessary baggage: scalar and vector parts were always used independently, and not as a quaternion.

Both these issues were addressed independently by Josiah Willard Gibbs and Oliver Heaviside between 1881 and 1884.



Their intuition was to 'free' vectors from the quaternionic framework.

They replaced $Sc(\vec{u}\vec{v})$ and $Ve(\vec{u}\vec{v})$ with operations between vectors (not quaternions!).

$$\vec{u} \times \vec{v} = (u_2 v_3 - u_3 v_2) \mathbf{i} + (u_3 v_1 - u_1 v_3) \mathbf{j} + (u_1 v_2 - u_2 v_1) \mathbf{k}$$

$$\vec{u} \cdot \vec{v} = u_1 v_1 + u_2 v_2 + u_3 v_3$$

$$\nabla \cdot \vec{v} = \text{div } \vec{v} = \frac{\partial v_1}{\partial x} + \frac{\partial v_2}{\partial y} + \frac{\partial v_3}{\partial z}$$

Note the changes of sign. As a consequence, $\nabla \cdot \vec{v}$ is now called **divergence**.

$$\nabla \times \vec{v} = \text{curl } \vec{v} = \left(\frac{\partial v_3}{\partial y} - \frac{\partial v_2}{\partial z} \right) \mathbf{i} + \left(\frac{\partial v_1}{\partial z} - \frac{\partial v_3}{\partial x} \right) \mathbf{j} + \left(\frac{\partial v_2}{\partial x} - \frac{\partial v_1}{\partial y} \right) \mathbf{k}$$

The approach and notations introduced by Gibbs and Heaviside are the one we use today in modern vector calculus.

As for quaternions, they are still widely studied.

They have important applications in computer graphics, robotics, and other fields, where they are used to represent spatial rotations.



THE CASE FOR WORK TERM REPORTS

I believe work term reports have an unreasonably bad reputation at this institution. They have brought me much joy and excitement over my first four work terms, and I hope everyone can some day share these emotions. I am writing this article to highlight some of the life-altering skills work term reports have taught me.

- Critical thinking skills. While comparing implementing a feature and burning my company's server room to the ground, I almost picked the latter option. However, while writing my work term report, I discovered that the former is a much better option for the environment. These critical thinking skills saved tonnes of CO₂ from being released into the atmosphere.
- Any number of mistakes is acceptable. Any number of spelling mistakes, grammar errors, or misused commas is still considered acceptable by work term report markers. I decided to apply this to all of my written work at my coops, saving significant amounts of time.
- You should always include facts that people already know. In my first coop, my manager spent his days roaming the halls after forgetting what our team did. After reading the summary about what our team did in my letter of submittal, he finally sat down at his desk and started coding again. These facts, which I originally thought were irrelevant, were critical to my manager's well-being.
- I learned how to use advanced LaTeX features. I had no idea that LaTeX could format arbitrarily complex and often vague formatting rules. Some of these features, such as having different page number types on different pages and creating lists of figures and tables, have come in handy at my most recent coop, where all code had to be typeset in LaTeX prior to code reviews.
- There are many ways to deal with failure. In particular, work term reports prove that if you fail in life, you can attend a 30 minute tutorial to get a second chance.
- Advanced compression techniques. Work term reports have shown me that the optimal way to convert a percentage grade to a percentage grade

is to convert the percentage grade to a word grade, then convert the word grade to a new percentage grade. When combined with more conventional forms of compression, less space is required to store these grades. In turn, this saves the university money. I believe this compression scheme should be applied to all forms of numerical data, such as bank account balances, to save on storage costs around the world.

Hopefully, you can now see some of the benefits that work term reports bring students. Even though I have completed my four required work term reports, I know that I will continue to write work term reports in my future coop terms to learn more valuable skills.

Lagging

CONVERT TO FLIRT

One of my friends has been giving me all the hot gossip about Minder (a Muslim Tinder-like dating app).

She has apparently seen quite a few white, non-Muslim, men on this app and when she asks them why they're on the app and if they'd actually convert faiths they usually say something like:

"idk i might be willing to if i found the right girl"

and

"ill think about it if it happens".

Another **mathNEWS** contributor said that maybe these dudes were on there to "see halal the options".

author

MATHEMATICAL PROOF THAT YOU ARE LOVED

[Editor's note: This is the good, wholesome shit I'm here for.]

let u be a complex number of the form $x + yi$ where x and y are greater than zero

$$\begin{aligned} i &< x + yi \\ i &< x + yi < 3(x + yi) \\ i &< 3(u) \\ i &< 3u \end{aligned}$$

I less than 3 you

You should be concerned if I were to stop biking to the university.

PROF. BENOIT CHARBONNEAU

A STATISTICALLY PROVEN METHOD TO WRITE A WINNING ARTICLE USING A DATA-DRIVEN MODEL BASED ON PREVIOUS WINNING ARTICLES

ABSTRACT

The title *Article of the Issue* is a long sought after status quo that is a dream achievement for many hungry starved uWaterloo **mathNEWS** contributors. By developing a statistical approach to analyzing past submissions, this article shows how to assemble a winning article using a computational approach in Python of the most commonly used phrases and words, thereby allowing other writers to use a data-driven approach to having a higher probability of achieving Article Of The Issue.

1. METHODS

The current and past term articles of the issue were selected by copying and pasting into a plain-text document from the posted PDF files found online on <http://mathnews.uwaterloo.ca/>. This data was then parsed in Python, stripping out newlines and additional spaces. Twogram and threegram (Where an ngram is n words beside each other) were gathered, and the top fifty of each dataset were selected. By selecting out the most frequently occurring twogram and threegram, sentences could then be constructed to form a mostly cohesive sentence made from literary gold in the eyes of the **MathNEWS** editors.

2. RESULTS

The existence of a god. Some of the number of mines must be a University of Waterloo. The Cosmological Argument game-piece designs that the universe of information can be the most miracle that midiLength = a god. For some game would be nothing, Surely the gods must have a coming to campus at time $t = 0$.

Surely the gods must be nothing.

3. DISCUSSION

3.1 SOURCES OF ERROR

While the source of data was a digital form (PDFs), there are inherent issues with copying a formatted document into unformatted text. Small special characters such as non-breakable space characters cause **MathNEWS** to show up as a common ngram Math NEWS. Some words that are not on multiple lines showed up on multiple lines, which could cause some ngrams to be higher on the list. For an improved revision of this computational model's input, as well as output, the raw unformatted text from the drafts should be considered as an improved input.

3.2 NEXT STEPS

With a larger input dataset and more funding and time for the researchers involved in this study, markov chains could be considered to further automate this process of generating quality content. However, due to time constraints, only the past term and the current term could be fetched and placed into the input dataset, resulting in a small set of ngrams, not enough for a good markov training dataset.

APPENDIX A: PYTHON CODE USED FOR GENERATION OF NGRAMS

```
#!/usr/bin/env python3
import os, sys, glob
import collections
import pandas as pd
import inflect

issue_articles = "lotsofwinningarticles"

class Process:
    def __init__(self, article):
        f = open(article, "r").read()
        f.replace("\n", " ").lower()
        f = ' '.join(f.split())
        twogram = self.__generalNgram__(f, 3)
        print(self.createFrequencyTable(twogram))
    def __generalNgram__(self, text, ngram):
        out = []
        text = text.split(" ")
        for i in range(len(text)- ngram + 1):
            out.append(text[i:i+ngram])
        return out
    def createFrequencyTable(self, gram_list):
        df = pd.DataFrame(gram_list)
        inflect_rename = inflect.engine()
        groupby_list = []
        for x in range(len(gram_list[0])):
            df.rename(columns={x:
                inflect_rename.ordinal(x + 1)}, inplace=True)
            groupby_list.append(
                inflect_rename.ordinal(x + 1))
        return df.groupby(groupby_list).size()
            .reset_index()
            .rename(columns={0: "occurrences"})
            .sort_values(by="occurrences",
                ascending=False)[:50]

c = Process(issue_articles)
```

FROM TINDER 2 LOVE PART 2

Just about a year ago, I was on Tinder cause I was a sad and lonely human. I was fresh from a break up three months before this where I dated this girl only cause I was sad and lonely so that was a horrible experience. I remember seeing this cutie with a passion for design on Tinder. We both followed 'Being Noticed by Senpai' which is a meme page

So this lady messaged me first asking me if I watched Madoka Magica. I consulted my roommate because she is a female human that knows how to interact with the opposite gender unlike me. She instructed me to 'say I watched the anime to get into her pants,' I read the synopsis of the anime then proceed to lie to this girl. We talked about our passions, roots. I struggled to avoid telling her my passion for cars and a specific type of grass. I suggested we get pho but that got shot down since she believed her mom's pho was best pho. Instead we went to Kinkaku since I've never been there before.

On March 23rd 2017 I picked up this female creature at MC with my car. I made sure to wash it nicely beforehand but I doubt she noticed. She seemed to lead the ordering at the restaurant the entire time. It was pretty good then the desert came in. She took creme brûlée and fried mars bars then proceeded to mash it together. I thought this was a normal thing so I was about to do the same then she abruptly stopped me explaining that the mix is her special thing. To finish this experience I had to show I was a gentleman so I paid for both of us.

After the restaurant we played board games at C&D with her friends for a few hours. Then we went back to my place and watched Gekkan Shoujo Nozaki-Kun at my place and cuddled awkwardly cause I realized I forgot how to interact with females. I drove her home late night cause allegedly she believed her mom will get pissed otherwise.

She convinced me to write for **mathNEWS** the week later. I reached but not before I smoked a joint with my good friend. This guy talked me into smoking it in my room and it would air out within the 5 hours when she came over. THIS DIDN'T WORK AT ALL, I DANKED, THE ROOM DANKED, SHE KNEW INSTANTLY. I feared a lot since she did ask me jokingly if I did drugs and I said hell nah. She was considerate enough to not reject me since it's my life choices. I'll remember this night by the smell of pine needle Fabreeze since me and my boy sprayed the room a lot before I left to pick her up.

We eventually caught feels really fast. She wanted to 'study' at my place during finals because it was close to campus but we basically goofed the entire time. We explored a lot of KW since I have a car. We kept our relationship lowkey with her family then she slowly introduced me to her family by making me useful to them. I basically got adopted to the family since I was the only person that knew how to fix things there lmao. I knew she had eczema since I have it as well so I provided her

with my medication since the strength is really high compared to what she had. This helped cure it a lot but she still has to work on stopping the constant scratching.

Over the past year we bonded a lot by exploring the world. We visited BC and I got to see the west coast for the first time. I learned I have a passion for looking at trippy art and trying to interpret it from my viewpoint. She is a big inspiration in my life, I was losing passion in school cause I was dreading digging out of the hole I created. I realize we both really enjoy exploring the world and trying new things with no fear.

BMONEY

THE BOOGIE MAN IS POSTPARTUM DEPRESSION

Today I saw the 2014 film, The Babadook. I have not seen a horror movie that I've liked so much and been so scared by in a long time. As a uterus-owner with a rough mental health history, having a biological child and unintentionally hurting it during a mental breakdown is one of my greatest, hypothetical, fears. The movie does a good job of portraying a real side of motherhood that often isn't represented in the media. I'm at this production night for two reasons:

1. To get free pizza.
2. To leave my home and get those jump scares out of my head before bed.

Shook Film Critic

N THINGS OVERHEARD AT mathNEWS

- This might not be Imprint, but I'm really hoping to make an impression.
- I don't want a gun I want beer!
- I can only eat carbone crust.
- You want to know about Minder? Wait for the article.
- Dietary restrictions? CARBONE!
- How old is your exponentially aging mother?

swindLED

INVESTIGATIVE JOURNALISM: WILL THE ZOMBIE APOCALYPSE BEGIN ON THE UWATERLOO CAMPUS?

Recently, you may have started to notice strange individuals appearing on campus. They are recognized by their dead eyes, inability to communicate in anything else than groaning, and their shuffling about throughout the day. Anybody who has seen any zombie movie ever (or played a zombie video game, but those happen to be incredibly rare), would realize that these forsaken people herald the coming of the zombie apocalypse. But where did they come from? What caused this outbreak? If you are like me, famed investigative journalist Theodore Bear, you would want to get to the bottom of this, before it's too late.

The first piece of information that my investigation uncovered was a strange coincidence in the timing of when the first cases of this strange affliction appeared. This disease was first seen in early February, soon after Space X launched the Tesla Roadster into space. Since then, it has only spread. By the beginning of Reading Week, it had spread to, by my estimates, around half the University of Waterloo's students. Cases of the illness seemed to subside during the break, and many patients actually seemed to be cured. However, many of these supposedly "cured" individuals, when they returned to the Waterloo Campus, suddenly relapsed, and once more reverted to that state described in the opening paragraphs.

Working with the hardworking scientists and doctors on the UWaterloo campus, I was able to discover some more facts about the outbreak. Numerous cases of the disease were occurred in students of multiple faculties. Analysis of patient data has shown that there is a near uniform distribution of cases among the various faculties, but there seem to be less cases overall in students of the Arts Faculty. Why is that? What could it be? Are Arts students somehow more likely to have immunity to the affliction? Or could be that the Art buildings, such as the recently renovated Hagey Hall, have something about them to slow the spread of the outbreak?

Also, while the common symptoms of the illness appear in students of all years, they are more severe in students of upper years. Surprisingly, almost no cases have been discovered in the professors.

The most severe cases of the disease are currently being quarantined by the Math Faculty, so that they may be studied. These individuals are so far gone that they have lost all of their humanity, reverting to a state where they will attempt to attack everyone they see, and have in many cases have tried to eat their fellow man. Their incredible hunger is currently being satiated by boxes of pizza that are being placed in the room where they are being contained. You have maybe even seen

these demented individuals left behind by the world. They are being kept in the MC building. MC 3018, to be specific.

Now that we know some facts about the disease, we can try to answer the question as to whether the University of Waterloo will be the centre for a zombie outbreak that will consume the world. First, we will use the Romero Equation for Outbreak:

$$((d + s/E) - (p \times I) \times (1 - d))^t$$

where d is the "Dead" value, a measure of the percentage of individuals infected, s being a measure of the "Spread" value of how many individuals an average zombie will infect. E is the "Evil" constant, which helps normalize the s value, named after Dr. Julius Evil, 12th time Winner of the WHO's "Most Unfortunately Named Scientist". I is the "Infected" constant, which is 28. p is a measure of the ability humans have to protect themselves, and t is the amount of time elapsed since the first infection.

Plugging our numbers into the equation, we get a Romero value of 19.68, one of the highest Romero values ever recorded. That means that means that if any disease manages to morph a full-fledged zombie outbreak, it is likely that it will be this one. There a significant amount of people on campus who have already caught on to the danger that this new outbreak poses, trying to recruit fellow students into the war of "Humans Vs. Zombies", so that they can be trained for the coming apocalypse. We at the University of Waterloo are about to enter into a period of great danger and strife, where the world will be turned upside-down as we see our friends and family succumb to this horrible disease, and become shadows of the people we once knew.

Until all society collapses, stay safe readers. Wear those disease masks, avoid human interaction (very easy for Math students), and if you start showing symptoms of the illness yourself, then I'm sorry, it's too late for you.

Theodore Bear

I THOUGHT I WAS GETTING HOTTER BUT...

I looked at myself in the mirror the other day and noticed that my face looked...better. My skin was smoother, my eyes were soft, and I generally looked like I had a SnapChat on my face.

After a closer look, I noticed that my vision was kind of out of focus and when I leaned in, my acne scars and sleep-deprived beady eyes reappeared...

I made an appointment with my optometrist to get my vision checked but I might have to get Tinder to boost my confidence again...

Unattractive and Unbothered

NOSURF

TURNING THE INTERNET INTO TOOL, NOT A COMPULSION

WHY

Some people have a healthy relationship with their computers. I am not one of them. This article will outline the strategies I used to disconnect myself from my social media, and reclaim my time. The reader of this article is someone who wishes to curb their addiction to the internet.

PHILOSOPHY

Before we start: Should I, or you, or anyone for that matter, 'quit the internet'? **No.**

I once took account of where I spend your time on a daily basis. The times I spent browsing instagram before getting out of bed, perusing facebook during class, focus on reddit before dinner, and binge on Netflix before sleep. It wasn't pretty.

Compulsively checking the internet is not your fault. The apps we use are *designed* to make you spend as much time on them as possible. You might have heard it a million times, but engagement=addiction.

So while you may get some benefit from knowing what is going on with your friends from High School—it is ultimately dwarfed by the cost of losing hours of your day, and the opportunity of cost of not doing things that make you truly happy (being with friends, meeting new people, working on yourself etc.)

UNDERSTAND YOUR ENEMY

Why do you browse social media? I found myself breaking things down into three broad categories:

1. **Boredom.** As hectic as it is, student life can also have a lot of downtime. Looking at what's new on /r/uwaterloo is an easy way to pass the time.
2. **Interaction.** Maybe you made a witty remark on a friend's photo. Maybe you wrote a hilarious comment on your favourite subreddit. Wouldn't you like to know if anyone liked your comment?
3. **Vanity.** How does your profile look? Does it look good? How about now? Maybe you should check it again.

GOING COLD TURKEY RARELY WORKS

If you want to break a habit, stop yourself from making the wrong choices—but you probably already knew this. There are chrome extensions and apps that do this for you, but I—like many others—found that they rarely work. They're too easy to turn off, the they don't take away the allure of internet in the first place.

It's akin to trusting the good nature of the Cookie Monster to not open the jar full of cookies. The cookies have not been made inaccessible, they've just been made inconvenient.

So I argue this—don't just look the cookie up. Cover it with salt (not actually)—that is to say **make the cookie taste so bad you would rather eat kale instead.**

ACTIONABLE

What does salting the cookie mean for social media (and the distractions on the internet at large)? Let's address each of the 'draws' for social media for a given app:

1. **Boredom.** Remove all the entertaining options from your platform.
 - a. **Reddit:** Unsubscribe from every subreddit that interests you **and** use a blocker on those subreddits. To begin with start with fringe entertainment like /r/mildlyinteresting, then /r/videos, eventually /r/uwaterloo. This way when you log on to reddit the only things you only see the boring stuff. This process may take weeks—don't block everything in one go.
 - b. **Facebook:** Unfollow **all** the pages you have liked. Those memes bring no joy to your life. Then unfollow all of your friends. Once again, leave a few things in. Ideally you want a feed that changes only once every 2-3 days.
 - c. **Instagram:** You have a crush on your CS240 ISA. The way they say 'tree' sets your heart racing. **THIS IS THE PERSON YOU NEED TO UNFOLLOW.** Every time someone you care about posts something, the reward is enough to keep you checking back in for weeks. Furthermore, unfollow all the famous people, you know you won't be missing out on anything
2. **Interaction.** Social interaction is a powerful motivator for coming back. Stop doing that.
 - a. **Reddit:** I hate to appeal to willpower, so I won't! The solution here is technical—use a chrome extension that hides the comment button the messages button. To comment will require sufficient effort that you will need to think if it's really a good idea. **+1:** Sometimes it just takes maturity to know that you don't have to correct everyone who is wrong on the internet.
 - b. **Facebook:** Just kidding, use your willpower! Don't like that photo, don't comment, and certainly post something. A bonus tip, don't let other people engage you in interactions—don't let people tag you in memes, photos, or wall posts.

3. **(This was the hardest for me) Vanity.** The image you have online is not you, let it die.

a. **Reddit:** After 7 years and 10s of thousands of karma, I felt like my account was something special. Deleting everything I had ever posted was painful. That account showed my real time evolution from a idiotic tween to an idiotic undergrad. But that 'memory' is a liability, it keeps you coming back

b. **Facebook:** I had posts back from grade 7 tagging me in cringeworthy photos birthdays, graduations, and everything in between. Much of it was the link to a lot of memories lost in time. If deleting this is particularly hard for you, I would suggest backing up the things that matter to you elsewhere.

c. **Instagram:** Your crush might have liked your photo in 2012, but the sad reality is that they like everyone's photo. And they'll never look at your profile because they are too busy looking at their own.

BRING ON THE BLOCKERS

If you do the steps above correctly, you will now be in position to cut out your vices and keep them at bay. There a countless number of extensions and applications one can use. Although, if you are up for it, I would recommend writing your own custom blocker. It's a great way to learn how to make chrome/firefox extensions and you can code up special behavior for each device.

TECHNICAL NOTES

- What about twitter?
 - I never used twitter so I can't comment
- What about mobile?
 - Remove the apps from your phone, and use their mobile web version
 - The web versions have much higher friction and lack some of the truly time destroying functions (like Instagram discover)
 - Turn your phone grayscale
- But I can't stop using X, my life depends on it!
 - You have to seriously ask yourself how much value X provides to you. Do you use facebook groups to meet new people and plan new experiences, or do you just say you are 'interested' in events you know you will never attend? I am not a monk, I need to use Messenger and Whatsapp to make my life work as well. You need to figure out what stays and what goes.
- What will I do with all the free time?
 - The general advice is to replace the bad thing with the good thing—like coca cola with water,

or television with exercise. But to those (like me) who have trouble finding things to do:

"Just remove all the bad things in your life, until the only thing left to is stare at the wall until you figure out something better to do..."

MY ROOMMATE

life = \sum retractions

ALUMNI ADVENTURES: REVISITING CAMPUS

So last week I took a week off work to visit Waterloo. Visiting campus was a strange surreal experience. This was a place that was super familiar that I had spent a disproportionate amount of time in. Though a significant portion of the people I knew were gone, drifted in the wind. And so despite it being less than year things had changed.

Construction has sprouted in some new spot on campus. The LRT was finally here. And campus had filled with strangers.

There were still a lot things that were the same. Not everyone had gone and there were more people that I wanted to see then I really had the time for especially with my other plans that week.*

While here I did have some question what could possibly motivate me to want return to UW now I am free. The short answer this is my home town. My parents occasionally like seeing me alive and most of the people I know are concentrated geographically in this location.

The longer answer would be I genuinely enjoyed my time at UW. I feel like we hear a disproportionate number of stories of social alienation and academic stress. That the stories of success get drowned out. For me uni was place that I found challenging and rewarding. A place where I met some amazing friends. It was a place where I felt I had a lot of control over my life. Yes I would be stressing about my courses but I had picked what I would be stressing about. I had plenty of free time to procrastinate away or try to make something new. I might be currently working in Halifax but Waterloo still very much feels like Home.

But alas my vacation came to an end. And so I used my student card as a bus pass for the last time and headed off to my next adventure. Until next time.

Beyond Meta

*See other articles

QUESTIONS REGARDING SEXISM FOR THE MATH FACULTY

To celebrate International Women's Day, some peers and I discussed some of the recent sexist actions performed by various faculty members in Mathematics, and so I wanted to question and voice concerns as a follow-up to our discussion. These faculty members are supposed to be setting the professional tone in our school, the ones who should be demonstrating what is acceptable in the workforce, the ones who *should* know better.

Is it acceptable for faculty members to make derogatory comments about a female's make-up, insinuating that it is done up like some sort of prostitute, while in the presence of students? Or make mention of the pleasing looks that some female students possess? Do females not have other redeeming qualities? Maybe those students are brilliant? Maybe they are witty? Why are you publicly informing us on your views of their attractiveness? Like, does their attractiveness make their proofs more valid? *This is inappropriate. This is creepy.*

Is it acceptable to encourage female students to *milk their gender for all its worth*, as one faculty member put it so kindly to a student? Should we also be flirting to get to the top of our workplace positions too? Are our successes on the basis of our gender, not merit or work ethic?

Or is it acceptable to refer to female faculty members as "*so-and-so's wife*" as some faculty members seemingly do, at least around us students. One peer did not know that a certain female faculty member was a professor because the other faculty members who talked about her never referred to her as such. I mean, is that her new title now? Should we students refer to her as that, just as those faculty members do? I, personally, find this to be incredibly disrespectful.

I mean, what is this, the 1930s?! And maybe some of you are completely unfazed by this; it's the norm, right? This should *not* be the norm.

It would be interesting to see others' sexist experiences with faculty members; regardless of the gender they are targeting. They should be setting the example, not demonstrating to students that this behaviour is *okay*.

Awim

MINDER VS. TINDER

I am sure we all know what Tinder is but do you know what Minder is?



Minder functions like Tinder but it's for Muslims. It is dedicated to helping connect progressive, smart, fun, and interesting Muslims with each other. Sounds great, right? We all know that arranged marriage is not for everyone. I mean how else are we Muslim millennials supposed to ~~hook-up~~ get married at this time and age?

Apparently, Minder has over 20,000 users, and there have already been over 100,000 matches. So it's just like Tinder but the app is keeping it halal (more like trying to keep it halal).

I, unfortunately, have tried both apps and am is still single... But allow me to highlight the difference for you.

Tinder is filled with men looking for hookups and men who feel like sending you dick pics will increase their masculinity somehow. While Minder is filled with who are looking for more girls to add to their option list for "future wife".

Tinder is majority white or whitewashed men with some FOBs. While Minder is filled with majority Arab and brown men and some white dudes with an exotic fetish.

Tinder is filled, and I mean **filled** with trophy fish pictures. I am not sure why western men think fishing makes them attractive. But Minder is filled with Car pictures, and I can only assume that Arab/brown men think that nice cars make them more attractive. Minder also has a lot of close up beard pictures, some men seem to be very proud of their facial hair.

Now I know that are some success stories from both apps and I only spent a few days on each app. But this was my experience with them.

COOL_JEANS ADVICE

Don't go on Tinder or Minder trying to find a real relationship.

Join a new club or group. Get out of your comfort zone and maybe you'll find true love there because you won't be finding it on Tinder or Minder. I plan on doing the same, so until next time.

cool_jeans

Send more profQUOTES.

THE ENTIRE mathNEWS READERSHIP

DIRECTING A PLAY IN A WEEK

So the last week I decided to make the very sensible vacation plan of doing KWLTL's March Madness. A theatrical competition where you have several teams who on Friday are all given the same script. On Saturday they all audition their actors and the following Saturday they perform the play. The script chosen for this competition is written in such a way to be very open to interpretation.

Putting a play in a week is hard. Doing it in a week is even harder. Attempting to do so with script that is highly interpretable is well even harder. Especially when I have never directed before.

I found the entire exercise to be a fantastic learning experience. One that I will definitely be reflecting on for a while to come.¹ This might be my first time directing but it's definitely not the last time. I will definitely have to try this again.

There were hiccups along the way. Clarity of communication is an essential part to delegating. And it's not always immediately obvious when miscommunication occurs. Knowing exactly what information to convey so that people can do what you want is a skill in of itself. And it can definitely be stressful when critical things aren't done and deadlines are looming.

As a director my roles was to make all the artistic decisions and delegate. And ensure that the work gets done. It is a role focused on the big picture.

This is a very challenging exercise so I made the very reasonable choice of making it a musical. I have zero musical experience and the script is not intended to be a musical at all. What I do have is friends, talented friends that I convinced to help me.

Directing does feels weird in that despite the fact that I did work really damn hard all week. I downplay my own contribution. It feels like I have nothing to show for my work. Well except for the really awesome show that won the audience choice award. But was it really my work or my teams work? The correct answer is yes. I am a member of my team. But still I feel like the work that made my production stand out was the contributions of other people. And the major flaws of the production was my domain.

My production did lack cohesion² There were definitely plot threads that were very loosely connected. Making a cohesive coherent story is the director's job. I feel like I didn't do my job. Though I would say that a more positive way to view the situation would be that there is room for improvement for me to do better next time. My job was not to be flawless but to put on a play which I did.

Basically I have very unreasonable expectations of myself. That somehow I should have somehow flawlessly directed. Despite

the fact that this is a challenging play, you have exactly one week to do it and I am inexperienced at this role. It probably doesn't help that my team mates exceed my unreasonable expectations. THEY DID A MUSICAL IN A WEEK! KUDOS TO THEM!

The whole experience was an exhausting but exhilarating week. There is a certain magic to first reading a script and watch it transform over the course of the week into a show. Theater is a collaborative process where every member of the team contributes into making this play. Since at the end of week we made something that made people laugh, that tugged at people's heart strings and wowed people. And none of that would have happened if I hadn't stepped up to this challenge.

I definitely value being productive and contributing. It makes sense that I focus on how to do better but I also need to give credit where credit is due and give a little bit to myself.

Beyond Meta

1. If I am being completely honest the reason I am writing this **mathNEWS** article is not because I am certain this pertinent content to **mathNEWS** readership but rather because after an intense experience I find it helpful to write out my thoughts. I like to think that there are some universal truths of my experience and hopefully someone will find it to be an engaging read.
2. A little like this article if I am being honest. What can I say I am the master at the medium is the message.

THE VALUE OF LEARNING PEOPLE'S NAMES

mathNEWS received a few new contributors today! One of them being a cool person who writes under the name "cool_jeans" and called us out for not knowing each other's names despite meeting twice a month since the beginning of the term...

Now that we know each other's names, talking to each other is much easier! I borrowed a Sharpie from Angela! Luke walked in late! cooljeans_ taught us that Minder exists! Communication is gr8!

Human Person with a Name

Being a mathematician
requires imagination.

PROF. BARBARA CSIMA

I CHERISH THE MOMENTS



I cherish the moments
When I got you and you got me
We were happier
Then anything could be

I cherish the moments
When I forget you|
And I wish they would last longer than a moment or two
Its like I was the moon
And you were the ocean
Forever intertwined
But never together

I cherish the moments
When I don't have to choose between
The parts of me that still want you
And the parts that absolutely despise you

I cherish these moments
But most importantly I cherish you

Razan Qaoud

HOW TO MAKE DAYLIGHT SAVINGS TIME AS PAINFUL AS POSSIBLE

Ah Daylight Savings an outdated idea that we continue do because tradition despite the fact the reason for it no longer apply. And the growing body of evidence that the sudden loss of one hour of sleep causes death. I had forgotten this was a thing when I made my plans for last week.* So during the spring forward weekend I went to bed at 6am and 12:30am two nights in row. As well as change time zones to make this a sudden loss of 2 hours after a tiring week.

This resulted in me being a complete zombie for all of Monday. I spent the entire day looking forward to when I could finally nap. The moment I got to my bed person above me started playing the drums. They are now dead. I murdered them.

Beyond Meta

*See last other articles



Yeah, it kills half an hour
for me.

PROF. RILEY METZGER

profQUOTES 136.5

PART ($1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} \dots$)

MATH 146: MATTHEW KENNEDY

“ I'm gonna give you a 95% rigorous argument today... for good reason.

STAT 341: REZA RAMEZAN

“ You guys need kids; I think you should go make babies.

STV 210/HIST 212: SCOTT CAMPBELL

“ I know several people who wrote the textbook. In fact, I known all four people.

“ Prof: When you get a strike, the will of the bowling gods probably have less influence than—
Student: Heresy!
Prof: Okay, let's take a bowling-agnostic view here.

“ I'm never going to be an Olympic athlete... Maybe that's a defeatist attitude. Maybe you're too young for that.

“ I'll let you gaze at this dead technology.

“ My smartphone doesn't get out of its cradle, smack me on the head and tell me to get up and do what I need to get done.

“ This isn't a history class, right?

“ Because this option is very open and we're giving you a lot of rope, you need to check with us first so you don't make a noose and hang yourself

“ [Course evaluations] are used to determine things like my salary. I'm not bribing you or anything.

CS 343: PETER BUHR

“ How can it possibly work if it doesn't have the magic?

“ We can go back to the hardware designers and ask "do you have any more instructions? Maybe the assignment 4 Q2 instruction?

“ ... and we're also going to take a small trip to Norway

“ The one problem with this program is that you need to create a buffer that is infinitely large

“ All it takes is 1% and you're dead

“ You can't say "rewrite all your code in C++. Or even better, μ C++

“ You're sitting there wondering "how can infinity be easier than 6?" But it is!

“ You keep going until you run out of scotch or [find the bug]

“ ---- These ones have context attached, I don't know if they work without the context

“ (On the topic of parties:) You wait for that moment when the fun is almost over, but the cleanup hasn't started, and you leave

CS 451: JIMMY LIN

“ In the beginning, ... well, in the beginning, there weren't computers

“ To illustrate that, I just drew a big cloud around it

“ Today, we will have the next instalment of "learn buzzwords"

“ The area under the curve is exactly what you think it is—it's the area under the curve

“ All your assignments are variations of counting and dividing

CS 444: NOMAIR NAEEM

“ I'm going to tell you how I'll write the rules, then not write the rules

“ (on "int x = (x=2) + x") I just bought a book called "Clean Code", right? I wonder if it says this shouldn't be done

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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MARCH MADNESS

Ah, it is that most esteemed time of the year, where last fortnight it was warm enough such that all the snow had melted and the geese had flown back thinking it was spring already, whereafter we get a straight week of light snow, blanketing everything and turning the city back into a wintry wonderland, except this time with vicious unpleasant geese. It is truly an integral part of the Waterloo experience, along with the final project crunch which accompanies the usual mid-to-late March fare. At least, I presume that is the main reason why I have only received two solutions to the previous issue's grid this week.

Last issue's **gridQUESTION** was "What is the worst thing that a professor could say while they are handing out midterms?" and the responses were as follows:

- DX submitted a correct grid and answered "Oh come on people, I didn't make it that hard! Yes, its closed book but everything should be relevant to what I explained in class. If anything, your final will be twice as difficult' [Test is non-relevant & ROM-hack hard.]"

- athamizh and bvenkite also submitted a correct grid and answered "Better Luck Next Term!", which, to be honest, would be pretty terrible to hear when your prof was handing out midterms. Come badger the editors for your prize at your leisure.

Submissions to this issue's grid shall be made, either physically to the **BLACK BOX** or electronically via email to mathnews@gmail.com, by 1800 hrs on March 26th, 2018. To help solvers locate the **BLACK BOX** on the 3rd floor of MC, photographs of the location of the **BLACK BOX** have been taken and should be included somewhere nearby in the paper.

Submissions should include a name (if you want a prize) and optionally a pseudonym which the submission shall be credited to. In the event of a tie for the most correct submission, the tiebreaker shall be my favourite answer to the issue's **gridQUESTION**, "What is the most ridiculous excuse for not finishing an assignment or project?"

Hopefully the steadiness of the **gridWORD** helps the reader to weather through the choppy waters of March, whilst avoiding the various hazards on the way.

Zethar

ACROSS

- Winged
- One of the most popular programming languages
- Nonsense
- A king who after he rid himself of a curse was later cursed with the ears on an ass.
- Hawaiian strings
- Preside over
- Magician
- Cast
- Type in 6A
- Stands
- Use acid
- Long time
- Tokyo island
- Tags
- Palindromic title
- Arabian garment
- Wood which produces a flammable and toxic powder
- Fibre crop
- The philosophical doctrine that (aside from tautologies) empirically substantiated statements are cognitively meaningful
- Chosen ones
- Tally marks?
- French key
- Hillock
- Draft pick
- Wife of a raja (variation)
- Arias, usually
- Military Time?
- Depending on which side of the pond you're on, could refer to the dishes or one's hands
- Unkempt hair
- The Southern Cross

- Empericism in practice
- Chimney channel
- Snake deity
- Euripedes Tragedy
- It may be pitched
- Roster finale
- Mooring sites

DOWN

- Concert array
- Pre-Euro money
- Gulf port
- Preferences
- We swapped from this earlier this week
- A kingdom vassal to the Assyrian Empire that controlled modern-day Jerusalem
- Like
- Cabbage, e.g.
- Comments to the audience
- Title translation of a 2004 Japanese romance/comedy about a "nice guy"
- Escape routes in a tight situation
- Blackthorn
- His and ____, traditionally
- Fathers of cambions
- Winner of the 2006 Fields Medal and the 2014 Breakthrough Prize in Mathematics
- Filching
- Sacred sanctuaries
- Blather
- ÷, †
- Holes in the head
- Ludicrous
- A Catholic white vestment

- Seating request
- Social genes
- Eyes
- Shade of blue
- Antarctic cover
- To enter forcibly
- Between the treeline and the snowline
- Cores
- Sharer's word
- Regional
- Fabric
- Wheel turner
- Wove
- 10⁶
- Fair feature
- Your machine probably has one
- Present time?
- "Welcome" site
- 1 C/s

1	2	3	4	5	6	7	8	9	10	11	12	13
14					15				16			
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51	52	53				54			55	56	57	58
59					60				61			
62					63				64			
65					66				67			

lookAHEAD

SUN MARCH 18

Applications for Equithon close at midnight

MON MARCH 19

Let's Laugh Day

TUE MARCH 20

Drop penalty 1 period ends

WED MARCH 21

Drop penalty 2 period begins
Common Courtesy Day

THU MARCH 22

International Goof Off Day

FRI MARCH 23

OK Day
Puppy Day

SAT MARCH 24

Chocolate Covered Raisins Day

SUN MARCH 25

Waffle Day
Tolkien Reading Day

MON MARCH 26

mathNEWS 136.6 Production Night

TUE MARCH 27

International Bring Burgers to MathNEWS Editors day

WED MARCH 28

Something on a Stick Day

THU MARCH 29

Good Friday (university holiday, no classes)
mathNEWS 136.6 Published

SAT MARCH 31

Bunsen Burner Day

EQUITHON

Equithon is a social innovation hackathon that provides the tools for hackers to create solutions to problems in the fields of women empowerment, minority rights, physical disabilities, mental health, among other social equity issues. We strive to provide valuable experiences to beginner and veteran hackers alike by bridging equity issues and technology with experienced mentors.

Applications are now open for [#equithon2018](https://equithon2018.org)!

APPLICATIONS CLOSE MARCH 18!

Sign up at www.equithon.org

When: Friday, May 4th 2018 — Sunday, May 6th 2018
(no overnights)

Where: University of Waterloo

Who: All students of any gender, in any academic field, from any school!

Our sponsors this year include: University of Waterloo, BMO, Stripe, Facebook, Google, Conrad, HeForShe, and more!

Mentors and recruiters from these organizations will be at our event. They will be holding workshops, present professional talks, and providing technical guidance throughout our event!

On-campus accommodation will be provided for hackers from outside Waterloo.

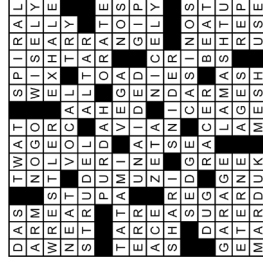
If you have any questions about the event, please email us at hello@equithon.org!

The Equithon team

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



LAST
WEEK'S
gridSOLUTION