math NEWS

MATHIE FANTASY

Volume 115, Issue 1
Friday, January 21, 2011

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*look*AHEAD

***math*NEWS**	
January 21	Issue 1 enters 2011 with a bang
MathSoc	
Tuesdays	Games night
Thursdays	Movies night
January 24-25 3:30	Office training
Math Faculty	
January 24	Course Drop Deadline-No Penalty
January 25-March 14	Withdrawl Period
CECS	
January 25	Interviews start
Miscellaneous	
January 31	Bubble Wrap Appreciation Day
February 3	The Day The Music Died

Senator Visitor Sez

I attended the Senate's January meeting and have a few things to report that might be of interest to math students.

First, due to major revamps in the Physics & Astronomy Department, Applied Mathematics course requirements are changing slightly for next year. Mathematical Physics and Applied Math/Physics Options are getting more significant revamps. As current students, you will still have the option to continue under this year's calendar, but you may find that the new calendar will work better for you.

Second, the Daily Bulletin will be getting a face-lift at some point later in the year. As a current reader, the changes (including an event calendar) sounded pretty good, but we won't really know how they are until they hit. If you are not a Daily Bulletin reader, then you are missing out! The DB (`http://bulletin.uwaterloo.ca/`) provides a great daily summary of events and goings-on at UW. I highly recommend that everyone check it out to see what's happening.

If you have any questions about this or anything else related to the Senate, feel free to ask me at `scshunt@csclub.uwaterloo.ca`.

Sean Hunt

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*math*NEWS is normally a fortnightly publication funded by and responsible to the undergraduate math students of the University of Waterloo, as represented by the Mathematics Society of the University of Waterloo, hereafter referred to as MathSoc. *math*NEWS is editorially independent of MathSoc. Content is the responsibility of the *math*NEWS editors; however, any opinions expressed herein are those of the authors and not necessarily those of MathSoc or *math*NEWS. Current and back issues of *math*NEWS are available electronically via the World Wide Web at `http://www.mathnews.uwaterloo.ca/`. Send your correspondence to: *math*NEWS, MC3046, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid `mathnews@student.math.uwaterloo.ca` on the Internet.

The editor(s): Harrison Gross, Will Hughes

*mast*HEAD

So here we are once again, fully into the thick of the term. *math*NEWS is finally out and I assume you're all very excited to be holding in your hands a copy of our glorious paper.

The issues of the now seem to be plentiful, whether it be the Tunisian Revolution and the affects it will have, or the looming crisis faced by Europe as they attempt to unify or divide. The world changes around us, as we sit here, holed away, attempting to grow, change, and learn.

We're adults now. And yet, more often than not, we are continued to be treated as children in our day to day lives, from clingy parents to a university administration that continues to treat its undergraduate students like chattel.

Given the world we live in, the following ***mast*HEAD Question** seems appropriate: Who do you want to be if you grow up?

theDreamer ("Magic"), Zethar ("Dead"), RedMetal ("Anyone but me"), TieFrosh ("!u"), MustardMap ("The God of Death… or Lust. Same thing."), The Unfortunate Optimist ("The Fortunate Pessimist"), import this ("Bruce Willis"), Soviet Canadian ("Someone with a wagt they can live on"), FuzzyED ("root"), theSMURF ("Someone who can think up witty answers to *mast*HEAD questions"), ¬perki ("perki"), Algoweird ("God"), ieatyourSANDWICH ("The god of the new world!"), Blueberry Muffin ("an apple-picker").

GroovyED
Not a *math*NEWS Editor

MGC Sez

Welcome back Mathies! I'm writing to give you some more information about graduation!

Weekly Pizza Sales: They're now TWICE a week! You can find us on the 3rd floor of MC on Wednesdays and Thursdays from 11:30-1:30. $2.25 per slice, $4 for two slices!

Intending to graduate in 2011? You should fill in and submit your intent to graduate form! They're due March 1st if you have classes in Winter 2011 for Spring convocation and August 1st for Fall Convocation.

Have you taken your grad photos yet? You're at risk of not being in the class composite!!! Now go book your appointments: `http://www.lifetouchatwaterloo.com/`. This applies even if you're convocating in Fall 2011!

GradBall: A date has been selected! It'll be held on Saturday, March 5th, 2010 at St. George's Hall. More details to follow! So save the date and keep your eyes (and ears) open for tickets!

Yearbook: You can now pre-order yours (SAVE 20%) and personalize it too! Visit our website for more details (`http://mgc.uwaterloo.ca`).

Picture Submission: Do you have any pictures you would like to see in your yearbook? For more information please visit: `http://www.mgc.uwaterloo.ca/yearbook/`.

Volunteers: MGC is always looking for volunteers to help with their weekly pizza sales and various other activities. If you are interested, please email us at `uwmgc2011@gmail.com`.

Maria Christina Greco
Communications Director
Mathematics Graduation Committee 2011
Website: `http://mgc.uwaterloo.ca`
Facebook: UW Mathematics Graduating Class of 2011
Twitter: UWMGC2011

VPA Sez

Hello everyone,

I am Hellen Hou, and I am very excited to be the VPA of MathSoc this term. There are a lot of goals I want to accomplish and I will give you a heads-up on a few here.

I hope to ease the process of finding a job for math students, and to build up the professionalism we Math Students have! I created two directors (Co-op Rep and Professional Development Director) and their respective boards to help me achieve this. Last week, we organized resume critique workshops and around 60 people attended the sessions and received 1-1 help. We are going to organize the resume critique workshop again for the second round of job searches; we will also be hosting interview workshops. Details to follow. In terms of Professional Development, we will be offering professional photo-shoots for students and we will also be running fun events such as Speed Networking.

In terms of resources, we are dedicated to presenting you a robust resources library, where you can find useful information such as a resume checklist, websites to look for jobs outside Jobmine, etc. We are currently exploring the possibility of creating a Problem Bank to help you practise problems and better understand course materials. Exam Bank, yes, we are trying to get as many past exams as possible! Last but not least, Textbook Library! You can check out textbooks from MathSoc, too! Come to the MathSoc Office (MC 3038) to ask for details!

As for representation, I am sitting on different committees and have a lot of meetings. I hope to represent all of you fairly and voice your opinions and concerns. That said, if you have any questions/suggestions, don't hesitate to come and talk to me!! I will make myself available 6 hours per week in the Mathsoc Office (Wednesday 1:30-2:30 P.M., Thursday 2:30-5:30 P.M., and Friday 9:30-11:30 A.M.) and I am always reachable via email at vpa@mathsoc.uwaterloo.ca.

That's all for now. I will keep you updated!

Hellen Hou
MathSoc VP Academic W2011
vpa@mathsoc.uwaterloo.ca

VPF Sez

Hello Awesome Mathies,

My name is Selin (Celine) and I am your new Vice President of Finance for this term. I will try to do my best to keep every student HAPPY by not abusing my non-existing power!

Hopefully we will be approving this term's budget this week which means MathSoc and Clubs will be holding their events soon (or they already started). Yay! Also, don't be shy to join them because our directors don't bite (I think).

Just a reminder, Mathletics forms will be up for four more weeks. Don't forget to check our new items & combos in the C&D.

Last but not least, if you see me around MC, feel free to come and say Hi!

Have a great term everyone.

Selin Erkaya
MathSoc VP Finance W2011
vpf@mathsoc.uwaterloo.ca

Prez Sez

Fellow Mathies,

Hello and welcome to a new and exciting term with us in MathSoc. Thing are already underway nice and quickly this term and I predict that this will be one of our best terms yet. We have a lot of old faces, but also a lot of new ones too, and we hope that those new faces enjoy what we have to offer. It's only the 3rd week of classes and I have already met with the Executive Officer Jack Rehder, Associate Dean David McKinnon and finally the Dean himself, Ian Goulden. The main points of topic were the exam bank, M3, and the digital signage project. Another new and exciting thing you all may have already noticed is the new and improved Comfy. And if you think it can't get any better, we will be replacing the microwave with a new one and also installing a mounted projector and stereo system. Those last two might take some more time, but they will be up.

That's all I have for you today. Come by MathSoc (MC3038) and say HI some time. I look forward to talking with you.

André Gomes Magalhaes
MathSoc President W2011
prez@mathsoc.uwaterloo.ca

VPAS Sez

Hey everyone! A little belated, but welcome back to Waterloo for Winter! I hope you are enjoying the fabulous snowy and REALLY cold weather! Don't worry, soon it'll warm up and the geese will be back!

I'm the VP of Activities and Services for the term. What does that mean? I'm responsible for things like the MathSoc office, social events like Movies and Games Nights and MathSoc novelties (along with all of our wicked directors)! Did you know you can buy MathSoc novelties (like those SWEET MATH SHIRTS you see people wearing around), super cheap photocopying, and the cheapest calculators on campus in the MathSoc office? It's awesome, and you should take advantage of it!

Also, last week was our **Third Annual Frost Week**! We hope that you enjoyed all the events that went on. We had Hot Chocolate, Clubs Day, a Novelties Sidewalk Sale and resume critiquing in the Comfy. On Friday everyone got decked head to toe in math stuff for Math Pride Day and had free cotton candy!!

Start looking out for posters in the hallways for some awesome events! Tuesday night Games nights and Thursday night Movies in the comfy are BACK!!! So make sure you check them out. Also, we had a fun time cutting locks last week. If your lock was cut, you might not have thought it was too fun, but you can find your stuff in the MathSoc office.

Enjoy the rest of this wonderful first edition of *math*NEWS for the term, and keep checking here for updates on what we're up to. :-) As always, if you're interested in getting involved with MathSoc, or have an idea for an awesome event, you can email me at vpas@mathsoc.uwaterloo.ca or visit us in the MathSoc exec office (MC 3039), we love visitors.

Anna Merkoulovitch
MathSoc VP Activities and Services, W2011
vpas@mathsoc.uwaterloo.ca

How to Land a Co-op at a Top Tier Software Company

Want to work on the highest profile software projects in the world? Want to get paid more per hour for co-op than the average CS grad makes out of school? Want TechCrunch to call you a genius? Then read on to learn how to land a killer co-op at companies like Google, Facebook, Amazon, Microsoft, or Apple. In the following paragraphs, I will teach you how to land interviews and succeed at technical interviews. This is the guide I wish I had three years ago when I was starting out as a fresh-faced frosh.

My Credentials

I'm a 3A Software Engineer. In the past two years I've interned at a Toronto based startup called Xtreme Labs, Amazon.com, and Google. At Amazon, I worked in the exploding industry of cloud computing - creating the next generation of Amazon Web Services. At Google, I contributed to the upcoming Honeycomb release of Android designed for tablets. In addition to these co-ops, I have interviewed with many startups and established companies like Facebook, Hulu, Sybase and Qualcomm.

I still have three more co-ops to go before I graduate. I expect to learn even more about the interview and co-op process in that time, so this is not the definite guide to software engineering co-ops. Feedback, corrections, and suggestions are welcome.

How to Land Interviews

Scoring interviews with respected software companies is difficult, but with an impressive resume it is possible. The key is standing out. Your grades don't matter, side projects do. If you submit a tight resume that boasts that you build websites, work on a start-up, and run an active github account, you're almost guaranteed an interview with any tech company (Exception: Microsoft, they only interview upper year students, which is why I have yet to interview with them). Once you complete your first co-op, interviews are easier to get because once you work for one big software company, the rest want you.

Don't have any side projects or notable work that sets you apart? Unfortunately you might not get a top-tier interview in your first few years of school. But maybe you'll get lucky, especially if you follow my resume do's and don't's.

Do...

- List all side projects and open source contributions front and center.
- List notable languages and technologies you know. Emphasizing that you know some of the cool, hip languages suggests that you're a passionate and smart techie. Things like Haskell, Scala, Node.js, and NoSQL databases.
- Don't be afraid to exaggerate your accomplishments at previous companies a bit. Did you increase database performance by 100%? Are you sure it wasn't 200%? You managed a team of three? Wasn't it actually five? Everybody does it, and no interviewer will ever question you, unless you blatantly lie.
- Cut out hackneyed phrases. For example, you don't need to mention that you have "Excellent written and oral communication skills" or that you're a "team player". Those phrases are boring and the resume reader will hate you.
- List your CS interests. Really into test-driven development? List it. Can't get enough of pathfinding algorithms? Put that down. Concurrency make you excited in the pants? You get the idea.

Don't...

- Describe the classes you take in school (unless they are noteworthy, i.e. taking a grad level course on compilers)
- Make the resume too long. Brevity is awesome.
- Try to be modest. A resume is no place for modesty. Brag and exaggerate if you need to.
- Make your resume look like everybody else's. This is absolutely crucial. DO NOT USE THE LAYOUT THAT WATERLOO RECOMMENDS. Make your resume stand out.

For some examples of resumes, checkout mine at `andrewmunn.com` or my friend Fravic's at `fravic.com` or the famous Paul Butler's at `paulbutler.org`.

Get a Recommendation

There is another way to get interviews. Get a recommendation. I was recommended to Google by a friend of mine. If you're not a socially awkward penguin, this is the best way to ensure that you get an interview. Full time employees will practically beg you to let them recommend you because of the generous referral bonuses most companies handout. Even if you can't get a full-timer to recommend you (because you don't know any), an intern referral can be just as good.

How to Ace Interviews

The secret to technical interviews is that they have almost nothing to do with your day-to-day job as a Software Engineer. Software Engineering interviews test you on your ability to think in highly stressful situations, communicate your ideas effectively, and win over the interviewer with your charm and intelligence. They do this by asking you to quickly and efficiently solve algorithm- and data structure-based software questions.

This is incredibly hard. This is how Google, Amazon, Facebook, and Microsoft can claim they only hire the best people, by failing most people at the interview stage. Many qualified candidates fail, but that's on purpose. It's better to have false negatives than false positives. See Joel Spolsky's influential essay:`joelonsoftware.com/articles/fog0000000073.html`

Many online guides to interviewing at Google perpetuate the misconception that interviewers ask logic questions, such as "You have a weight scale and eight rocks. One of the rocks is lighter than the rest. How do you find the light rock?" You will never be asked a question like this, so don't waste time on them.

Another misconception, which, unfortunately, Waterloo perpetuates, is that you'll be asked soft skill questions such as "When was a time you resolved a problem with a coworker?" I have never been asked a question like this by a top tier company. The only kind of question you will be asked are algorithmic questions. Note: startups and stodgy, old companies like IBM and Sybase will ask you soft questions.

The first step to mastering interviews is studying core computer science concepts. Every question you are asked in a technical interview will involve at least one of these concepts:

- Objected-oriented programming
- Single and two-dimensional arrays
- Single, double, and circularly linked lists
- Recursion
- Hash tables
- Stacks, queues, and heaps

- Trees
- Binary search
- Merge sort
- Quick sort
- Linear time sorts (Bucket sort, counting sort, radix sort)
- Depth and breadth first search
- Pointers
- Algorithm solving approaches (divide and conquer, brute force, dynamic, etc.)

Other, more advanced concepts that are nice to know are design patterns, graph theory, and map-reduce. I recommend picking up a copy of CLRS, it's fun to read and covers most of the bases. Additionally, it will probably be the book for your algorithms class.

Programming Languages

Usually you can write code in any programming language, but I'd recommend at least knowing Java and C/C++ to cover cases where no choice is given. For example, Qualcomm will often require you to write C functions. Google, Facebook, Amazon, Microsoft, and VMware let you choose the language of your choice.

Python or Ruby are excellent choices for programming interviews because of their succinct and easy to follow syntax and powerful built-in features and the general familiarity in the software community. Knowing one of the "hip" languages can be useful. A friend of mine and his interviewer bonded over a shared love of Haskell, which secured him the job.

Failure is not an Option... Usually

If you are asked a technical question in an interview and cannot provide reasonable answer in a reasonable amount of time you will fail. No exceptions. Most companies do two or more 45 minute interviews. In a 45 minute interview expect to answer two to three questions. If you only manage to get through the first question, you failed. If you don't finish the second question in time, you fail. If you sit there quietly for too long you will fail. If you come up with an O(n log n) solution, but there was a O(n) solution, you usually fail.

But... sometimes you get lucky. During an interview I came up with a O(log n + k) solution to a problem when the ideal solution was O(log n), but I explained that I implemented it my way for simplicity. After the interview I assumed I failed, but I still got an offer.

Hints

Sometimes you'll need a nudge in the right direction to finish a question, and it's acceptable to ask for a hint. For example, I was asked, "How can you implement a queue using only stacks and still achieve efficient dequeue() performance?" I started off by quickly describing the operations of queues and stacks, and then explaining the naive solution and how it would require O(n) time to dequeue an element. I was a bit stuck, so I asked for a tiny hint. My interviewer said, "what if you used two stacks?" "Eureka!", I shouted and then coded up my implementation and described how it worked. Asking for that hint gave me enough time to answer the next question and move on in the interview process.

"Heard this one before"

One gray area of interviewing concerns what to do when you receive a question you've heard before. You can either lie and say you've never heard the question, or reveal that you know the solution. I'd recommend admitting you know the answer, because this establishes a bond of trust between you and the interviewer. Getting a job by lying isn't the best way to start an co-op.

This has only happened to me once. I stopped the interviewer mid explanation and told him that I'd heard that one before, and I quickly described the solution. Instead of asking me a new question we just had a chat about life at the company I was interviewing for. I got the offer.

Social Skills

Beyond pure skill at solving programming problems, social skills are critical to interviews. If you're a socially awkward penguin and can't imagine wowing an interviewer with your social skills, I suggest reading *How to Win Friends and Influence People* by Dale Carnegie. It will teach you a great deal about how to get what you want and still make everybody happy in the process.

For example, in an interview, I recognized my interviewer from a presentation he had given the year before. After introducing myself and shaking his hand, I mentioned how much I had enjoyed his presentation. This sparked a 15 minute discussion. When we actually began the programming questions, I only had time to answer one. I feared that I had failed, but to my astonishment, my interviewer brushed it off by saying we had wasted lots of time talking and not to worry about it. I later learned that the question I missed was a real doozy. That discussion might have gotten me the co-op.

Confidence is king. Don't constantly ask the interviewer if you're doing it right. It makes you look weak. Act like you're interviewing the company to see if they are good enough for you, as if it's a forgone conclusion that the company would want you, and that you're trying to decide between them and three others. Just like in dating, nobody wants to be around somebody needy. However, avoid arrogance. If the interviewer suggests something to you during a problem, by all means take their advice. Interviewers love it when you take their advice.

It's OK to make jokes. Especially at a place like Waterloo, the interviewer will appreciate some humor after a day of boring interviews. It's best to avoid self-deprecating humor. I once joked that I was terrible at recursion during an interview and despite answering all questions correctly I didn't get an offer. Most importantly, never joke that the product of the company you are interviewing with is evil. Especially if that company is Sandvine. Learned that the hard way.

One area where social interaction can make or break the interview is the last five to ten minutes when the interviewer asks you if you have any questions. Start asking the interviewer what he or she does at the company, how long they've been there, and if they like it. You'll have an interesting conversation that will make you stick out in the interviewer's mind later. As a plus, you'll learn a little bit about the culture and happiness of employees at that company.

Dress Code

Don't wear a suit. Suits are overly formal for interviewing with hipster, west-coast software companies. Plus, who wants to work for a company that expects a suit in an interview? Walk into the interview in jeans and a trendy t-shirt from `threadless.com`. For example, I showed up to an interview with Facebook wearing the "three wolf moon" shirt and my interviewer smiled, laughed and said that was the coolest thing he'd ever seen somebody wear to an interview.

How to Land a Co-op at a Top Tier Software Company (cont)

A rising tide lifts all Boats

Help your friends prepare for interviews. Do everything you can to get your friends good jobs. Recommend them for a position at your current co-op. The more friends you have at good companies the more referrals you can get in the future. I have friends at every major tech company, which will help when it is time to apply for full time positions.

Even when you're competing with your friends for the same job, help them out. Most top-tier tech companies will hire as many interns as are qualified. Even if your friend does a better job in the interview than you, that likely has no bearing on the results of your interview. Plus, having friends with you on a co-op is a blast. You can move across the country and live together. Last term I lived with six other Software Engineering students in Mountain View. It was epic.

Next Time

So there you have it. You should be now be prepared to succeed at applying and interviewing with top tier tech companies. It's a lot of work, but it's worth it.

In my next article I will reveal the secrets to a successful co-op. Don't miss it.

import this

Letter From the BLACK BOX

To: "Lonely in Waterloo"

[This is a letter we received in response to the article "Every Math Personal Ever" in Volume 114, Issue 4 of mathNEWS *— GroovyED]*

Dear "Lonely in Waterloo",

It's nice that you're "fun loving, good looking, and intelligent" and that you are clean and know how to cook. Those things are fairly important most of the time.

Before you read any further, you should know that I am not responding to your advertisement because I want a relationship. I just have something to say in response to it.

I think that math is lonely (and hard) in general. That doesn't stop it from being wonderful though. When I first read your advertisement, I felt sad. Sometimes I feel really, really, really, really, really lonely. I have lots of friends, but it's a different feeling that I can't really describe. People usually feel good when they know that others are suffering with them, but I think that's unbelievably backwards.

I think (from what I've observed) most of the guys (and some girls?) in math are lonely. Especially when you consider the male:female ratio in most classes, loneliness is an inevitable consequence (however, there is always the case that I'm not considering in this letter, homosexuality, simply because I want to keep it short and cannot write an elegant, compressed letter or program for the life of me).

And even consider that ratio, I myself am a girl and I still feel the loneliness. However, most of the time I get the impression that a lot of the guys in my classes are really antisocial/hate girls. There are ones who still won't talk to me. Oh well.

I just wanted to tell you these things. Loneliness sucks and everyone experiences it, even though we don't all openly talk about it. Have an excellent day!

*dissed*CONNECTIONS

Hey, we met outside and I pulled a knife on you. Then we went to a coffee shop for some drinks and it was a magical time. I haven't seen you walking that way home ever since. This time I want to pull a bludgeon on you and take you to a movie after.

Fly by night man

Ye's announces new Scarborough Sushi Roll

Ye's Sushi, a favourite stop for students, just got a lot more appetizing, as the owners have begun serving a new type of sushi: the Scarborough Roll. A Ye's original, this roll may be enough to pay a visit to the restaurant before you graduate!

Just last week, Ye's served the very first roll to eager university student Marco Di Martini and three of his friends. All of them got more than they expected out of the roll. Within seconds of the roll being placed on the table, Jonathan Kuntz, Di Martini's friend, was shot. There were no witnesses.

"We were just sitting there, and all of a sudden there was this loud noise and Jonathan dropped to the floor... blood was everywhere," commented an excited Di Martini as his friend was rushed to hospital. "That was one hardcore roll, so we ordered a few more."

Over the course of the group's hour and a half stay, one of them was robbed, held at knife point, and accused of holding up a 7-11. "It really felt like I was walking through Scarborough; my girlfriend even got pregnant and we don't know who the father is."

The Ye's franchise was pleased to hear that the trial of the Scarborough roll was so successful that they plan on bringing it to all of their locations. "It will be like having the Scarborough at all of our locations."

Health officials have expressed concern about consuming large quantities of the Scarborough. "People with increased exposure to the roll have an almost 300% greater chance of dropping out of school and pumping gas at the local Sunoco or chain smoking with a knife in the back." Although the roll cannot conclusively be linked to these adverse affects, officials advise that sushi lovers use their common sense in their consumption.

Regardless of the alleged health risks associated with the Scarborough, sushi fanatics will definitely need to give it a try. Just remember to bring a bullet-proof vest if you're going anywhere near Scarborough!

The Hee Ho

Eduroam

Just like PDEng!

Well intended but never works.

Rainbow Mathies #3

A Series on Coming Out

Welcome back everyone, to a new term at what is soon to become either your most beloved or most hated place. At the end of last term I said I'd spend today talking about improving a closeted life in Residence. While I am going to touch on it, I realized during some of my recent conversations with readers and friends that there was more to this topic than what was on the surface. You see, at the core, living a closeted life among peers and friends is directly relating to coming out: the process, the reasoning behind it, and all of its intricacies. So I decided to spend this term talking about coming out in its various forms what both queer people and straight need to know about the process, as well as some of my own views on the subject.

First, an obvious question: what is "coming out"? Since sexuality and gender identity are "invisible statuses", it's never immediately obvious who considers themselves a member of those communities. Since people often assume others are straight or cisgendered (a word which means that their gender identity and their physical sex match up) and since there is often a stigma associated with being queer, most queer people choose to keep their identity a secret initially. Coming out refers to the process that a queer person embarks on when they wish to begin disclosing their identity to other people, either privately to important people in their lives, or publicly to society in general. This series hopes to explore the deeper aspects of coming out, like what coming out actually means, reasons for choosing to come out or not, whether someone is ready to come out, what to expect, how to do/not do it, etc...

So why write this series, and why now? In my experience, it seems like the most common time for people to come out around here is sometime during their 1B term. This makes alot of sense to me, since by now people have made their friends in a new place and are starting to cement deeper connections. Some, or likely most, of these friends have at some point expressed some kind of support for queer people, which is reassuring. They have met a wide variety of new people, some of them likely queer themselves. For some people, this could be their first experience with people like them. After returning from a trip back home, they discover how adjusted to life at Waterloo they are getting. The novelty and allure of first year at university is waning, studies are becoming more serious, and interests outside of socializing in residence are developing. These interests may even include dating, like so many of one's other peers are already doing. As time passes, the idea of stepping out of the closet becomes more and more comfortable.

But still, coming out can be a daunting process for everyone involved. It can be boiled down to an issue of trust: will the people one chooses to come out to treat their new knowledge with respect and kindness? Sometimes this can be a blind step to take, and its always good to have some guidance and support when making it. I hope that anyone choosing to go through the process during this term can look to this series as a source of that guidance and support, and as somewhere to reach out to should they encounter problems. I also hope that, by bringing up some of the issues these students are facing and hopefully sparking discussion, that this series helps make the Math faculty a safer and more comfortable environment to come out in.

I'd like to end every edition of this series with a coming out story, just because I believe they are some of the most enabling things for people dealing with issues of sexuality to hear. I'll start today off with my story. Like most queer youth, I knew from very early on that I was different from most of my friends, but I never really had a strong idea why. In grade 7, I remember that the first relationship among my peer group developed. They would act all lovey-dovey, holding hands and whatnot, whenever they were together. This was most apparent on the school bus, when they would take seats in the back of the bus and cuddle while the rest of us averted our gaze. That was the first time that I realized that I would have rather be the girl in that position than the guy. Yikes.

As the years went on and I became more cemented in my identity, I didn't tell a soul until Grade 9, when I told my best friend. She was my sole confidant through the first two years of high school, where I ended attending an extremely homophobic school. I transfered out by grade 11, where I found a group of very supportive people. By the time second semester rolled around, I had confided in two of them, and one of them in return told me they were also queer. I felt great having people to talk about these kinds of things with. For one of the first times in my life I had a group of friends I could actually rely on, knowing that I could be myself and not worry about losing them. With this in mind, I began to question what I was hiding from by staying in the closet. Realising I had no answer to the question, I decided it was time to come out in general. I did so during the summer, merely by changing my facebook "interested in." The reaction was overly positive in my case: I remember walking into work the next day to a huge hug from one of my coworkers, commending my apparent bravery. Overall, people treated me better post-revelation. There were less queer slurs uttered in my presence, people stopped writing "homo" on my locker, and people told me they felt closer to me than ever before. My Grade 12 year was the most amazing of all my school years, and I was one of the lucky few who was able to come to Waterloo completely out of the closet.

If you feel comfortable sharing your coming out story for this series, have any comments for this column, or would like to suggest future topics, please email them to me at `dtaleman@uwaterloo.ca`. I will respect your confidentiality, and no names will be published.

If you are queer identified, and are looking for someone to talk to or for supportive allies, there are always resources available to you. You can learn more about GLOW and its offerings, including a phone line at `www.knowyourglow.ca`.

Counseling Services is always available to you, their offices are open 8:30-8MTTh and 8:30-4:30WF, located in Needles Hall across from Student Awards & Financial Aid. If you need support and assistance immediately, you can call the Waterloo Crisis Center at 519-745-1166. If you'd feel more comfortable speaking with someone from a queer specific service, please contact the GLBT Youthline at 1-800-268-9688.

Join me next issue as I discuss why coming out is one of the most selfish things to do, and why that's ok.

(define this (not cool))

Ten Books A Programmer Should Read

Are you a programmer? What does the word "book" make you think of? If the smell of dead trees and dead media comes to mind, you are correct. Books, however, still have a lot of value to add for members of our craft, even if they're consumed in iPad or Kindle format. In fact, programming is a profession where keeping your skills up to date is uniquely important due to the incredible pace of technological change with which it is synonymous. Here, then, are a collection of ten books I think you should read if you're serious about making a career out of programming. The books on this list (and the love of self-improvement that reading them implies) are what separates a great programmer from a merely good one.

Incidentally, I've elected to avoid mentioning some obvious candidate books that focus more on CS theory. Examples include *The Art of Computer Programming*, *The Structure and Interpretation of Computer Programs*, and *Introduction to Algorithms*. These books are all great, and you should probably take a crack at all of them. These are, however, not really *programming* books in the sense I mean here, rather, they are in my view *Computer Science* books. Maybe I'll make another list sometime for that category of books.

1) "Mastering Regular Expressions" by Jeffrey E F Friedl

The degree to which every programmer needs to know regular expressions right now is really hard to convey without resorting to shouting. I know lots of people who don't really appreciate how unbelievably useful regular expressions are. I can say in all seriousness that my regular expression knowledge makes my life better almost every day. Being able to bash out a quick perl or ruby one-liner to automate some repetitive task is incredibly useful. A programmer interacts with the world primarily through the interface of text, so you better know how to manipulate big chunks of it. This book covers regular expressions in a truly absurd level of detail, so if you make it to the end, I guarantee you'll be a regex ninja.

2) "Effective Java" by Joshua Bloch

I love this book. It's the same idea as the earlier work *Effective C++*, but that book spends more or less the entire book explaining how to avoid the numerous inadequacies, traps, and pitfalls of its titular programming language. This is undeniably useful, but what it doesn't have is a sense of design. *Effective Java* is quite the opposite, spending most of the book explaining how to use Java features and good design to build working software. If you want to understand the state of the programming world today, you absolutely need to read this book, and you really need to understand the contemporary view of building object-oriented software in the style it suggests.

3) "JavaScript: The Good Parts" by Douglas Crockford

JavaScript is a programming language that is growing in importance. It's the de facto choice for client-side web scripting, and it's currently in the middle of a boom outside its home territory through efforts like Node.js. JavaScript is amazingly "hip" right now, and this book is its Bible. In fact, it's a remarkably short and remarkably pure book, which spends almost no time on actual web scripting; it spends lots of time revealing the beautiful functional language inside JavaScript (inspired by Scheme and Self), helping you push aside the rotted carcass of Java syntax that it's trapped inside of.

4) "Code Complete: A Practical Handbook of Software Construction" by Steve McConnell

This is pretty much the expected recommendation. Everyone and their dog swears that this book will change your life and cure your foot sores. It's important stuff to know, to be sure. Some parts of it are pretty obviously only useful insofar as your employer resembles Microsoft, but it's packed with many interesting and useful ideas that any programmer can appreciate. Probably my favourite thing about *Code Complete* is that it actually makes an effort to back up its claims by referring to academic research on software construction. Instead of advocating something "comprehensive" that contains the word "methodology", it presents both opinions and facts in a clear and no-nonsense manner.

5) "On LISP: Advanced Techniques for Common LISP" by Paul Graham

"What's the big deal about LISP?" you ask. "I was forced to learn Scheme in first year at University, and I hated it! You can't do anything with it. It's certainly no C++ or Java". Regrettably, there seem to be scores of people coming out of the better CS schools who were taught a lisp dialect but who never really "got it". This book will make sure you understand the unique advantages of lisp better than any other, and it includes an excellent treatment of lisp macros. It's certainly not light reading, mind you. There are sections of code here that I think I spent a full week trying to understand. Once you finally get it, though, you'll gaze into all those parentheses and achieve programming Nirvana.

6) "Learn Prolog Now!" by Patrick Blackburn, Johan Bos, and Kristina Striegnitz

This is the book on the list which I've most recently read, and honestly, I loved it. Prolog is pretty unique in the world of programming. Certainly, it has a character of functional programming about it, but there are things you can do with Prolog that would be almost impossible in other languages. If nothing else, it's certainly useful for solving logic problems! I found the whole thing mind-enriching, making me aware of the potential for logic programming, and impressing me with the power of its simplistic syntax. For the right problem domain, Prolog will be your best friend.

7) "Why's (poignant) Guide to Ruby" by why the lucky stiff

This book is amazing. Honestly, though, it isn't necessarily going to teach you a lot of Ruby. If you're an experienced programmer (especially with some perl or python knowledge), you can probably pick up Ruby in other ways much quicker. Indeed, if you read *Why's (poignant) Guide*, you should emphatically not enter in to the experience with the goal of adding a new language to your arsenal, because you will find the whole thing frustratingly slow. Instead, you should approach this book as what it is: A work of art, a source of entertainment. Appreciate it as literature, the way you'd appreciate a poem or a fine wine. It's probably the closest analogue to those things in the world of programming.

8) "Real World Haskell" by Bryan O'Sullivan, John Goerzen, and Don Stewart

The thing about Haskell is that it doesn't compromise. More forgiving languages like Common Lisp might be described as "functional", but only some of the time, when you feel like it. If you learn Common Lisp, you can probably get away with writing it like it's just verbose python (not that I suggest it). Haskell, though, forces you to adopt the side-effect free functional style and give up your stateful ways cold turkey. I very much recommend it. Trying to write a piece of software in Haskell will make you break out of your object-oriented straightjacket in a way that no other language can (with the arguable exception of the subject of the next book). It will be harder. Accept that. It's worth it.

9) "The Little Schemer" by Daniel P. Friedman, Matthias Felleisen, Duane Bibby, and Gerald J. Sussman

I love this book and its sequels, *The Seasoned Schemer* and *The Reasoned Schemer*. The hallmark of the books is that they're entirely presented in question-and-answer format. There is no exposition, there is no explanation. It just dives right into the action. Things do start a bit slowly (it's an introductory programming book, after all), but they speed up pretty fast around halfway through. Keep with it. Try and answer every question before you read the answer, even if you have no idea. It's the only way to learn. When you are ready, writing the metacircular evaluator is something of a rite of passage in the programming world. Go forth and conquer.

10) "Design Patterns in Ruby" by Russ Olsen

I wanted to wrap up this list with a design patterns book. The Gang of Four book, *Design Patterns* is all right, but I find it a bit dry at times. Another book you hear suggested a lot is *Head First Design Patterns*. This one is good, if you like the format. I certainly suggest you take a look at it. Instead of those two, though, I'd like to suggest *Design Patterns in Ruby*. It covers most of the useful patterns from the original Gang of Four book with interesting new insights, and then it introduces a few ruby-specific ones. It's an excellent illustration of the modern role of these patterns, and I especially like it because it made me realize that design patterns aren't just an artifact of rigid "Big Enterprise Java" code.

Thor

Math's 10 Most Wanted

1. x, wanted dead or alive. x has been linked to many terror attacks on math. Although solving for x has been done before, he tends to turn up again and again. x is known to change values in equations, so approach with caution! Please note that although x is math's most wanted criminal, combinatorics has been known to harbor this criminal and refuses to find him. Reward $1,000,000,000.

2. y, wanted dead or alive. y, although not as dangerous as x, is still a highly wanted criminal in math. y has been known to give away his location; however, this is usually in terms of x. y has also been known to replace functions, making him extremely dangerous. Reward = Reward for x/10

3. The last digit of pi. If we can find the last digit of pi, many computers can be taken off the task of finding numbers in pi. Also, who doesn't want to know what it is? To find this digit, it will be necessary to find all the digits before it. Reward $(pi * 100000)

4. ∞. Infinity is known to pretend he is a number, and has made his way into mathematical equations before. Infinity causes confusion to people who are not good at math and makes numbers look bad. Reward $∞ , arg, now even I am doing it.

5. Harry Nilsson*, singer of the song *One* ("One is the loneliest number that you'll ever do. Two can be as bad as one"), is wanted for libel and slander against 1 and 2. Although he is not likely to be dangerous, he is extremely mean to the number 1 and 2. Reward $100,000

6. 1. Although 1 is not a dangerous criminal, he is the loneliest number, and we want to fix that. Reward: a hug from 1.

7. Irrational numbers. They have been known to force rounding and cause infinite computation in loops that don't check for bounds. Irrational numbers are, as their name suggests, irrational, and hence can be extremely dangerous. Reward $3.1415?.

8. 8, wanted for questioning in connection with infinity. Have you ever seen how close they look? 8 MUST know the whereabouts of the infamous infinity. 8 is known to be crazy, and care should be taken not to provoke him. Reward $888,888,888.88888?

9. 69. The number 69 is wanted for adultery. In addition, we need to find 69 so that we can remind him that he is ONLY a number and NOTHING else. It is vital that math keeps its reputation and 69 is making this difficult. Reward $69.69. What? There is NOTHING wrong with that number.

10. 0 a.k.a. -0, 0i. The number 0 is wanted by the division and modular math societies. 0 causes math to break when used as the divisor. 0 is wanted by the negative number society and the positive number society for tricking them both into allowing him in. 0 is also wanted by the imaginary number society and the real number society for the same reason. Reward: $(100/-0i)

**Harry Nilsson is not wanted in any country, and can only be captured using math. Attempting to arrest him outside of math may end up getting you in trouble.*

The Chief of Math Police

MathCooks!

Beans! Beans! Beans!

I moved into a new place this term, and my new roommates were curious as to whether or not I could cook ethnic food. I decided against telling them my failures in making chicken with broccoli (Curse you, broccoli!) but decided today on a whim to make use of my pantry of dried Chinese goods for the first time this term. The process did take me a good six hours, but it was mostly hands-off and the results are delicious!

If you've ever had buns from Chinese bakeries you know the different types of pastes that they use for fillings. From lotus seeds to sesame, it seems we can make a delicious dessert filling from anything. Since I had a bag of red beans left, I decided to make a batch of red bean buns. It's quite like making meat buns, except obviously the filling is sweet and it's more of a dessert dish than entree.

Fair warning: This recipe is more pot-intensive than ingredient, so there will be a fair number of things to wash after you're done. That's what friends are for, right? You will need:

Filling:
- One package of dried red beans
- Sugar
- Oil

Bun:
- Flour
- Yeast
- Sugar

Looks really simple, doesn't it? The key to making red bean paste is patience. You can buy packages of dried red beans most places. Soak the beans in a large pot of cold water for at least 4 hours. That's 2/3 of the time spent already! Then, bring the pot to a boil and turn the heat to medium and let it simmer for another hour at the very least, until the beans becomes completely soft.

While your beans are boiling or soaking, you can start the rising of the dough! Prepare the yeast according to instructions (I usually just eyeball it: lukewarm water with a few spoonfuls of sugar dissolved in, then add a spoonful of yeast.) Once fully dissolved, add the yeast-water to the flour. (I think it's about 2 cups of flour to a good spoonful of yeast, but I'm sure the packaging does a better job with ratios) Add more water as needed (and flour to counterbalance if you go over) until you form a dough ball. Use your hands! It's funner that way! Once you have a good dough ball, leave it someplace warm for an hour or two to rise. I chose to preheat my oven for 3-4 minutes and then leave bowl of doughball in the oven. That's just me though.

Once that's done, it's time to go back to the boiling pot of beans. Is it soft? Good! Here's the tricky part which works a lot better with a food processor. I didn't have one, so I just used a big spatula. You want to drain most of the leftover water (if there are any). Then, either blend the mixture in a food processor, mash it around with a spatula until it's gooey. Now take out a big wok or similar pan and add a bit of oil to the bottom. Pour in your bean mixture and continue stirring and mashing with your spatula while the heat removes moisture from the bean paste. Here, you'd want to add sugar. For my one package of beans, I added about 4 handfuls of white sugar which made it just sweet enough but not overpowering. Make sure you taste it!

Continue stirring because the paste may stick to the wok, which should be steaming at this point as the moisture leaves the paste. Patience! Meanwhile, keep mashing! Eventually, the paste should start to get thicker. Once you think it's thick enough as filling (It shouldn't be too dry, but it shouldn't be dripping off your spatula), scoop it out and you're done!

Now, to put it together: Roll out your dough into a log of about ... an inch thick and cut into medallions. There's no hard or fast way to do it, though the bigger the medallion, the bigger your bun in the end. Press down on each medallion and roll it into a round wrapper. Add generous amount of filling into the middle. Close the bun by taking all the sides together like a parcel and applying a pinch-and-twist technique to seal it.

Of course, it needs to be cooked to be eaten. Steam the buns in a steamer tray for about 10 minutes and they should be done. It sounds pretty intimidating, and it was when I did it for the first time awhile back, but have no fear! Experiment! As for the pots... I should get around to washing them.

Side note: The paste doesn't just have to be for buns. Once made, it should keep in your freezer for at least a few weeks (Thaw and use). You can use it for dumplings (Kind of odd), or other similar confectioneries. I'll get to that next time!

Panda with Buns of STEEEEEEEE... Red beans.

Signs your Roommates may have been replaced by Robots

You know you were wondering

So, obviously we're all prepared for the Zombie apocalypse. If you're anything like me, you have decided your exact course of action the second the zombies are on their way. However, have you made your plan for the robot uprising? In case you haven't, I've come up for a simple list of things to check just to ensure you're not too late. Without further ado, here are the tell-tale signs your roommates have been replaced by robots:

- The newly implemented "No more fridge magnets" rule.
- The mysterious puddles around your living room have stopped smelling like alcohol and started smelling like oil.
- They are somehow getting less than the usual 4 hours of sleep students get. (This doesn't apply to real-time students, who don't know what sleep is.).
- A sudden interest in genetic programming, especially with applications in "giving rise to Skynet".
- Your food in the fridge stops going missing.
- Your apartment is clean for the first time since you moved in.

Sector_Corrupt

Fall of the Fourscore

Once upon a time, there was a *math*NEWS writer who started to write an article about a *math*NEWS writer who decided to write an article about a *math*NEWS writer. Then he realized that was stupid and wrote a less stupid article.

———

The wind blew through the clearing in the heart of the forest. The grass rustled as a cloaked man stepped into the middle, the noon sun shining directly down onto him. His eyes scanned the dense forest in front of him, his hand gripping the hilt of his blade.

"Show yourself, you coward!"

He stood there for several minutes, his challenge going unanswered, growing increasingly annoyed at the person who wasn't there. He released the hilt of his sword, turned back and began to walk away. As he passed the edge of the clearing, an arrow flew through the clearing towards the cloaked man. The forest stood still for several minutes before another man, dressed all in green, strode into the clearing opposite of where the cloaked man entered, a bow in hand.

"The first of the Fourscore Fellowship have fallen. The Age of Brilliance will end."

RedMetal

Orange News

Welcome to the first edition of Orange News, the unique news column where you'll find the stories that affect YOU, Waterloo mathies, together with exclusive commentary and more junk.

For today's sensational story we turn to our home and headquarters, the MC. According to unreliable drunk scientists, due to a combination of factors including tectonic plate movements, the vibrations from nearby construction, and people pushing really hard, since initial construction the MC has shifted 6 micrometers northwest relative to its original position.

Experts say that this shift might be the root cause of several issues on campus and beyond, such as how ugly the MC building now seems compared to everything around it, as well as the increasingly long lines to get in and out of the building using the southern doors between rooms MC2065 and MC2066 after classes end. It is worth mentioning that the entrance in question might not actually be the southern entrance at all, since I didn't have a compass on me when I checked, so I had to use the sun, which isn't as accurate as a compass, as we all know.

Experts also say that the MC shift likely had no effect on such major recent developments as the current economic state, the US's failure in capturing 9/11 mastermind Osama bin Laden, and the humiliation of England in the 2010 Football World Cup.

As your strong, attractive (and still single) reporter, I went out to find out what YOU, the math students of Waterloo, have to say about this development.

Diane, a 2B CS student, had this to say: "I don't care."

Some Asian dude from Stats whose name I can't spell (but probably contains the following letters: X, H, and/or Z), said, "I don't want to be quoted in your stupid article, now give me my book back."

A prof whose name will remain anonymous refused to comment until the rest of the class stopped laughing at me, and then asked me to stick to questions relevant to course material and to come talk to him after class.

It's important to realize that at this stage no one can tell what the effects of the 6-micrometer shift of the MC will be, or whether the MC will continue to shift. You can trust Orange News to keep you updated. But you shouldn't, because we're not very trustworthy.

Join us next issue, where we'll team-up with superstar journalist J. Jonah Jameson to tackle the question, "Spider-Man: Hero or Menace?"

Orange Crush

Good Idea, Awful Idea

This time on: Writing for math*NEWS*

Good idea: Writing articles for *math*NEWS.
Awful idea: Writing long pointless emails for *math*NEWS that make the editors hate you.

Good idea: Writing *math*NEWS articles while drinking.
Awful idea: Writing *math*NEWS articles while driving.

Good idea: Writing a short, funny article about anything related to math.
Awful idea: Writing a 6-part zombie tale that has nothing to do with math and isn't funny at all. Trust me on that one.

Good idea: Proof-writing your work.
Awfl ide: Not proff-wrting you wok.

Good idea: Keeping up with *math*NEWS and whatever else is happening on campus while on co-op.
Awful idea: Coming back from co-op, having no idea what the hell's going on, and trying to pretend you're still awesome even though you're not.

Good idea: Showing up to production night and meeting the awesome *math*NEWS stuff.
Awful idea: Not... doing... that?

Good idea: Creating original pieces for *math*NEWS other people might enjoy.
Awful idea: Stealing ideas from old 90's cartoons and managing to make them 90% less funny.

Good idea: Being a *math*NEWS writer and putting that on your resume.
Awful idea: Not being a writer but putting it on the resume anyway, and when an interviewer asks to see something you wrote you panic, then steal an Orange Crush article but scratch the name out and put your own name down, only to realize you could've just lied and said you're Orange Crush because it's just clearly a nickname and they wouldn't know it's not you anyway.

Good idea: Knowing when to stop before your *math*NEWS article stops being funny.
Awful idea: It just stopped being funny, didn't it? I KNEW it! Damn.

Orange Crush

The n Things I Probably Shouldn't Have Put On My Resume

Regret doesn't even begin to describe it

When you're a first year student writing your serious co-op resume for the first time, you're bound to make some mistakes. The nice people at CECS try their best to hold your hand, but hell, even that might not save you. In my case, I took the plunge and switched faculties from Computer Science into Software Engineering, and in the process dropped PD1. And well… shit happens.

Not getting any interview offers is bad enough itself, but being put on academic probation and the FBI international watch list and being labeled "as handicapped as a rhesus monkey in Antarctica" certainly seemed to have made an impact on my career and reputation. I hope this will help all those after me in writing their resume and avoiding my situation. Without further rambling, here are the *n* things I probably shouldn't have put on my resume.

- **Plagiarism** is NOT a skill. Rather, it is some sort of "academic offense" that can get you "expelled" or "on academic probation". Well shit.

- **D&D Character Sheets** are NOT a valid skill summary. Apparently my 16 Intelligence, 18 Wisdom and 14 Charisma do not "demonstrate my abilities", but instead show how "immature and unprofessional" I am. I guess the DC was too high.

- **Kill/Death ratios** will NOT show amazing Call of Duty skills. Instead, I was detained for four hours in an undisclosed location by undisclosed government officials, where I was questioned about the location of the bodies.

- **Con Man** should NOT be included with your past occupations. While it may seem that your individual abilities to lie, cheat, and con would be helpful in a corporate setting, most corporates like to handle their scandals with discretion, and frown upon my upfront methods.

- **Do-It-Yourself Explosives** should NOT be included in the educations section of your resume. Home made explosives do not get the same respect they had a few years ago.

- **Arson** is NOT a hobby to include. It appears that companies do not believe the inner desire that drives me to burn things down would also drive me to complete projects on time. I assured them that if I did not complete my project I would just burn it down. They were less than impressed and somewhat frightened.

So there you have it, fellow students. Avoid these points and you will probably do fine. Good luck on your job hunt!

(CS->SoftEng)SMURF

Geneticist identifies Gene responsible for making life unbearable for past twenty years

After many years of hands-on research, Simon Dale, UW researcher and renowned geneticist, successfully identified the Gene that has caused years of turmoil, emotional unrest and a series of alimony payments. "Since her discovery 45 years ago", reports Dale, "Gene has been an insufferable stain on this planet." Dale presented his findings using a recent photo of himself with Gene at a party. "Notice Gene's configured fake smile, meaning that she's going to chew me out over something later."

Gene was originally discovered by accident when parents Floyd and Maria Mason enjoyed too much wine one night in 1964. Originally named "Eugenia", Gene was under the radar of the scientific community for approximately twenty-five years until one fateful night when Mason and Dale both attended a mutual friend's party.

"My first interactions with Gene had left me excited and feeling like I just found something amazing" recounted Dale, "but that didn't last very long." Dale has gone into great detail about how Gene has affected his life, posting several long articles on his blog. Some details include Gene's affects on sleeping habits, nervous tension and neurotic behaviours in Dale.

This Gene in particular has already been positively associated with the declining quality of life for Dale. "We've attempted several cutting edge methods to try and counteract the affects of Gene such as introduce her to douchebag friends who will treat her poorly and cheat on her. [...] Nothing has been successful so far." Gene is also responsible for Dale's hair loss, his premature heart attack and nearly a decade of erectile dysfunction. Long term exposure to Gene can result in slumping in your chair, looking vacantly at the ceiling for hours hoping for some form of respite.

Dale's top research subject for the past five years has been an effort to isolate Gene from his life. "Insofar [our lab] has been able to keep Gene completely isolated from nearly every aspect of life. The last stage of our research will be complete when we figure out a concrete way to disconnect Gene from my pay cheque and personal assets." Dale expects that this process could take longer than thirty years, especially if Gene outlives him.

"What our lab needs is a breakthrough," Dale says hopefully "for example, a piece of debris from a nearby space station could fall out of the sky then hits and incinerates Gene, killing the bitch instantly." However, in all likelihood, no such developments will occur in the near future. Until then, Dale spends his time sipping Corona in a bar terrified that he may discover a strain of Gene.

The Hee Ho

Random Points

If you look carefully, you'll notice these points aren't as random as I claim

- What is up with the long, long, looooong lines at the DC cafeteria? It's like the lines tripled over the past two terms. They sell the exact same things they've been selling for years. Did people just suddenly realize chicken balls and burgers are awesome?

- And since we're talking burgers... I just returned to campus to find out we have a new Burger King where the HMV once used to stand. Cows everywhere are reminding you to "Eat More Chikin".

- You know how just before the term started the weather was sunny and warm and awesome, and as soon as classes got going it became snowy and freezing? You know what they call that? Deception.

- And since we're already talking about things that sound like Inception, I just watched *Inception* on DVD last night. Then I had a dream about Leonardo DiCaprio. Now I'm all paranoid. Get out of my head, DiCaprio! Or at least take that shirt off.

- Back to campus talk: ok, where did all these young people come from? Back when I started here two or three years ago, there weren't any young people at Waterloo, but now it's like everyone around me is a kid all of a sudden. What happened?

- Also, is it just me, or is the SLC much emptier this term? I think it might have something to do with the fact that nobody wants to walk the long way around half the buildings on campus just to get to the SLC in this weather. Which might explain the lines at the DC Caf... hmmm... see? Now we're getting somewhere...

- And since we're already talking about things that changed while I was on co-op, this might sound crazy... but I can swear that the 6th floor of the MC got some new walls installed while I was in coop last term. Is that right?

Orange Crush

The Quest

I woke from my bed as evening was falling
I had spent the last night doing internet crawling
I was looking for something; what it was I can't say
but it certainly wouldn't be found by the light of the day
I coded and wondered, probed and pondered,
while deep into the net my tendrils did wander.
Was I looking for something or just in a mood?
where one constantly seeks, forsaking both sleep and food?
My curiousity hungered but do you think that I fed it?
Nah, I just killed all my time chilling on Reddit.

The Slutty Programmer

Your Biweekly Dose of Bad Math Jokes

So I fully intended to write up a single bad math joke of my own devising for this week, but since I seem to exist within the intersection of the set of people who can recognize a good math joke and the set of people who can't tell a good math joke, I decided to just give you guys some math jokes I've overhead recently. So with delay less than epsilon,

- Our son won't stop doing math, honey!
  Not in my house, mister! You can differentiate all you want with your little hoodlum friends, but in here it's wild guesses and rounding errors!

- Girl, you're like a polynomial because you make me want to split you with my extension.

- What is the integral from 10 to 13 of 2x dx? (Hint, this is found on bathroom stalls)

- You know why I didn't make it to Group Theory this morning? Too much trouble to commute.

- Smooth mathematicians, differentiating girls from their panties since 1687.

Tie Frosh

Tips for Walking in Snow

1. When walking, keep your feet orthogonal to the ground. And by orthogonal, I mean perpendicular. It is completely beyond me why those nutcases in algebra insisted on creating an entire new word for $\pi/2$ radians, but just smile and nod.

2. If the snow is sparkly like a Twilight vampire, you're okay. If the snow is shiny like the top of your math prof's head, it's not. That's called ice, and you should walk carefully.

3.
```
(define (go-to-class? paths my-height destination)
    (local [(define routeA (first paths))]
        (cond
           [(empty? paths) false]
           [(equal? routeA destination) true]
           [(>= (path-snowheight routeA) my-height)
            (go-to-class? (rest paths) my-height des-
    tination)]
          [else (go-to-class? routeA my-height desti-
    nation)])))
```

4. When walking, try to avoid drifts, even if you have to take the long way around. Getting snow down your boots isn't n***ice***, if you catch my drift.

BlueberryMuffin

Your Average Junior Job Application

Company: International Buroucracy of Business Associates

Position: Associate Business System Analyst and Quality Assurance Network Database IT Guy/ Code Monkey

We are a large scale business firm with associates all over the world, working with solutions for everyday problems innovating and pushing the future of life the universe and everything, such as business and associates in the world working with technologies of the future, such as stuff and things.

Greetings, pathetic mortal! You are applying to this job because you are in debt, have no job experience, and are considered useless by the vast majority of the corporate world. Good News! We have a position for you!

Do you enjoy working 25 hours a day? Do you have what it takes to solve world hunger? Can you speak computer? We are looking for bright, talented young individuals to aid us in our quest for world domination.

Co-op slaves are expected to sharpen pencils, install paper clips, manufacture coffee, as well as *spawn more overlordssss*. In addition, you must do everything else that we didn't tell you already.

- Must have worked for our company before
- Have 10+ years experience with Microsoft F#
- Must have measured IQ of 180 or higher (We WILL check)
- Must have *BALLS OF STEEL*
- Own Call of Duty on the PS3 (noo noobs plz)

Why Work for Us? We offer competitive wages of $10 per hour, with unpaid overtime. Also our office is right in the middle of nowhere, on the corner of Loser Lane. We provide free water. Sometimes. Also we have an Xbox 360 in the lobby. But you won't have time to play it.

The Unfortunate Optimist

Handling Your Snake

The Importance of Opiuchus

The importance of the distant specks of light in the night sky on our lives have constantly been reaffirmed. The dawning of the age of Aquarius and the rising of Saturn in Scorpio led to the election of Emperor Palpatine as Pope, and when Leos focus on something, they get distracted, so long as Mercury isn't banging Taurus while the incestuous twins watch (their heads betwixt each other's heads).

So now, magically, since the Earth "wobbles" or some other pseudo-science bullshit, there's a 13th astrological sign, Ophiuchus: the snake handler. So now, those born at the end of November to mid December get to have their snake handled.

So now, watch out, Taurus, Mercury will be having some professional handling while, well, you know the rest.

Now I have Cancer
theDreamer

The Marthsie Chronicles: Point of Discovery

One life that the Math Faculty doesn't want to know about…

The day had finally come. A day that is MOST dreaded by any student…the day that grades come out.

"I knew it!" remarked one student as he browsed through his grades. "I just KNEW this would happen. I always falter at math exams. The assignments are ok, but why is it always the exams?!"

The girl next to him couldn't help but overhear. Her own grades hadn't turned out how she had hoped either.

"Don't worry about it. We all have bad terms," she said as a form of condolence.

"Why couldn't I have stuck with what I'm really good at instead of what I'm only adequate at?!" he said in frustration.

The girl turned to him and gave a quizzical look.

"What are you talking about? Everyone who comes to the math faculty is obviously quite good at math, it's just-"

"NO. You do NOT understand. I didn't really want to be here. I'd rather have more creativity in my coursework than the confines of theorems and proofs."

"Math IS creative! How else would you come up with all those proo-dammit! I'm late for class."

In a flurry, the girl picked up her things and headed to class. As she sat down, she realized that she had accidentally picked up that guy's notebook. As she browsed its contents for a way to return it, she came across the most ghastly thing any Mathie could find out about another Mathie.

The notebook was a sketchbook…and a HALF! This fellow Mathie, was an Artsie!

No, there was the Epsilon-Delta definition in there. And De Moivre's Theorem! Even an entire Python programming code was there, all amongst the artwork.

A Mathie AND an Artsie. No…***MARTHSIE***. That's what he was.

Nothing about the combination seemed logical. Like Windows and Mac, procrastination and productivity, and even Youtube comments and civility, the two just did not seem to go together!

Great Euclid's Ghost what had this girl gotten herself into?

waldo@<3.LE-GASP.ca

Graduating? Want to make a memorable impression?

Be on the selection committee, apply, or nominate someone for the:

VALEDICTORIAN AWARD - Due: March 11th, 2011

J ALLAN GEORGE AWARD - Due: February 11th, 2011

For the forms, please visit `mgc.uwaterloo.ca`.

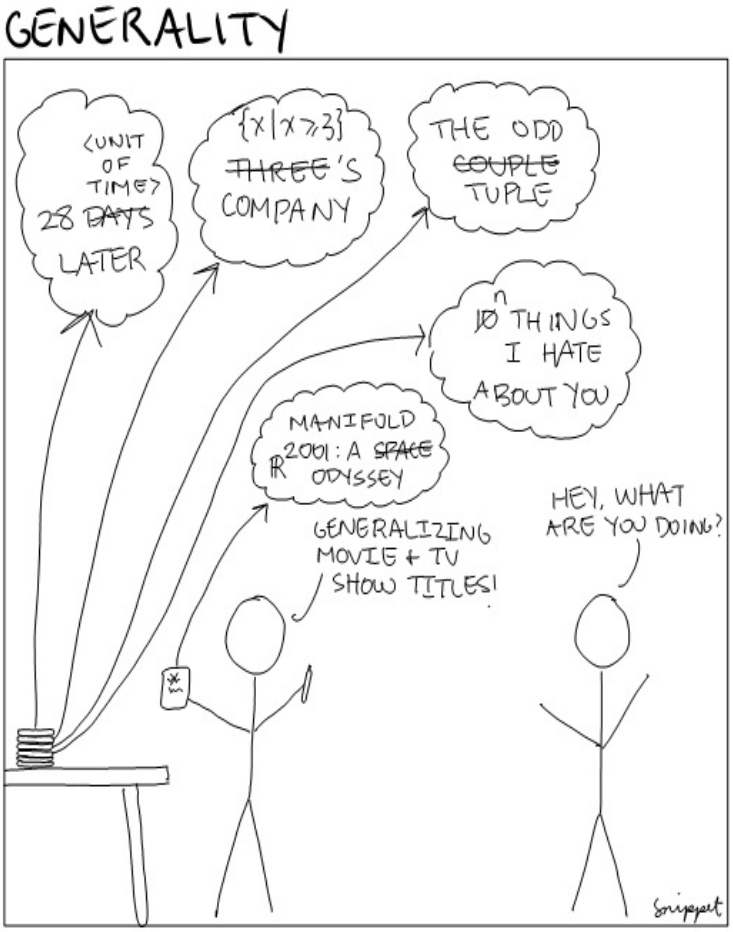
Chairman's Influence On the Rise Among Certain Sects of Waterloo Students

After his death in 1976, the legacy of this man remains clear to many who pay attention to the country which produced this distinct and influential personality. However, that is not the extent of his influence; even in modern day Waterloo, away from the poverty and social dissent which were fertile breeding grounds for communist thought, the chairman still holds considerable sway. The descendants of people affected by the policies of the Chairman notwithstanding, a certain sect of students, former and modern, live with a taboo of speaking the name of the Chinese leader who adorns every Renminbi bill which the PRC produces.

Silence is the norm under the conduct which is presided by the Chairman in spirit, as every person tries their hardest to shed the penalties dealt to them under the oppressive regime. Cryptic violations are a mundane part of life while new edicts seem to flow into the society at regular intervals, always netting more of the hated penalties. Woe betide to you if you speak when it is forbidden, and may the Chairman himself strike you down if you blaspheme by using his name in vain, even if called in a Point of Order.

Carry your red book, and repeat these words or else you know what he'll do to you, even from beyond the grave if you dare speak his name.

Meow



*prof*QUOTES

This town has 7 bars - this town must not be Waterloo.

Moshksar, STAT 230

It's a dark closet. Nobody sees anything. People would just grab something and get the hell out of there!

Moshksar, STAT 230

Degrees? Who still uses degrees? What is this, highschool? Or Laurier?

Roh, Math 136

If you want something from someone, use the friggin' subjunctive!

Schmenk, GER 201

I often resurrect my grandmother for the purposes of grammar.

Schmenk, GER 201

We're not talking about visiting friends. Then you can strip as much as you want.

Schmenk, GER 201

That's the good thing about tenure, you don't have to do these sums anymore... unless you want to impress the women.

Marcoux, PMATH 753

So this is trivial. Well, it's linear algebra.

Marcoux, PMATH 753

Life doesn't get better than a Hilbert space... unfortunately.

Marcoux, PMATH 753

Let's take R^ 3 since I'm really lousy at drawing infinite dimensions, at least when I'm sober.

Marcoux, PMATH 753

So you see, being a doctor is nothing but applying Baye's rule.

Poupart, CS 886

But this is just the relative frequency count. If you asked anyone on the street, they would do this.

Poupart, CS 886

Use this as a learning experience for who you're going to marry next term.

Ward, SE 350

You are married. The traditional 4-way marriage.

Ward, SE 350

[On the British] If by the age of five they don't detect a sense of humour, they shoot you.

Ward, SE 350

OSes are like governments. They don't actually do anything useful

Reidemeister, SE 350

Prof: I'd do this example with Tim Horton's, but I can't find a town in Canada more than 5 km away from one.
Student: Alert!
Prof: Someone always mentions Alert.

Lank, SE 382

profQUOTES

Do you think I became all keen and forethoughtful when I became a professor? No, I'm still the same idiot.

Lank, SE 382

[On being keen] But I'm not. I've never been keen in my life.

Lank, SE 382

You could record your entire life. Don't do it, it's not cool.

Lank, SE 382

If it looks like this, do this. If it looks like that, do that. NERD ALERT: That's an algorithm.

Knoll, MATH 128

I'm teaching a course about something that nobody really knows what it is.

Hoey, CS 486

I can't sell it to you, since that would be a crime, I think. See me after class.

Clarke, SE 402

You scan, you parse, you do something called weed...

Naeem, CS 444

Biologists are no good at math, since to them division and multiplication mean the same thing.

Ward, SE 491

Please don't get so excited for your last term that it doesn't end up being your last term.

Ward, SE 491

If you object to [this class ending at 10 vs 9:50], go to your Dean and complain that you're getting too much learning.

Smith, ECON 102

It does not take courage to be a mathematician!

Smith, ECON 102

While you were in your crib having involuntary discharges through various orifices of your body, I was preparing tonight's lecture.

Smith, ECON 102

The Internet bubble came, and you Canadians took a nap.

Smith, ECON 102

Prof: What's the factorial of 50?
Student: It's over 9000!
Prof: Thank-you for the internet meme.

Terry, CS 116

Prof: And 64 plus 5 is...
[Student guffaws profusely]
Prof: 69! I can see that has the other meanings for some people.

Terry, CS 116

Prof: The problem was, Gauss didn't exactly prove his thesis-
Student [clearly not paying attention]: OH SHIT!
Prof: Yeah, that's what Gauss said.

Koeller, MATH 135

... now I'm not going to put my muffin in your mental breadbox...

Novak, PHIL 100

I'm running out of memory!

Novak, PHIL 100

... does this mean he might be able to recollect an atomic bomb? Now this might not be what you want to do with your slave boy...

Novak, PHIL 100

.. now let's say there is a dog *draws some sort of animal* or maybe it's a sheep...

Novak, PHIL 100

You should check the course web page. If there's a cataclysmic disaster and...Waterloo is attacked by bear-sharks, that's where it'll be posted.

Godfrey, CS138

You can go into co-op and say "I have two terms of Scheme!" and they'll say "Um...we'll put you in the mail room."

Godfrey, CS138

Big Perl systems are a special level of hell.

Godfrey, CS138

I don't like not having chalk. Now I've got to erase with my hand. *Balls!*

Dupont, MATH119

...then we can formalize the notion of 'dy' as follows...this is a lot of [bull], by the way...

Dupont, MATH119

Note that you should keep your MathXL code secret as it may or may not control access to my secret lair of Power Rangers toys.

Dupont, MATH119

As you may know, Newton was a pretty bad-ass mofo.

Dupont, MATH119

If you do something like state that the error is "less than 10 000 000," then that's a pretty jackass move.

Dupont, MATH119

Sometimes I can't see through my own hair.

Dupont, MATH119

Let's call this set of equations 'snowman'.

Dupont, MATH119

It's important for you to learn how to do proofs in software engineering, to prove to your boss that your code will work one hundred percent of the time. Microsoft doesn't do that, though.

Pei, MATH135

(someone blows his nose) Okay, that's our sound effect for 'TRUE'.

Pei, MATH135

Hello? Excuse me? I'm here to DESTROY YOU!!!

Vasiga, CS 241

WORDARC

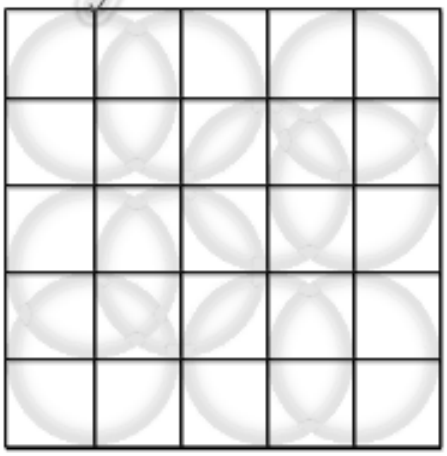
The scrambled words overlap by two letters

ael, adel, abdeo,
abdeeh, adeersv, eeanrsst,
deeirtu, eellrt, eorrr, gory, gny.

http://euri.ca/puzzles

umbrellas

Place the following 10 squares on the 10 circles so that the overlapping numbers match up.



6	4	4	4	3	3	6	9		
5	4	4	6	9	3	0	6		
9	3	2	7	7	0	3	4		
6	5	3	4	4	9	4	5		
9	3	3	8						
9	3	3	9						

Drywaller

"Listen up. Our client isn't picky, as long as each square has the right number of walls surrounding it. Sounds a little tricky, but we didn't get to be the #3 drywall outfit in town by being lazy."
Also:

- There's a wall around the outside
- They want exactly 14 rooms

2	1	2	3	2	1	1	1	2	4
1	2	3	3	1	0	0	0	1	3
2	2	1	2	1	0	1	1	2	3
2	1	0	1	1	1	2	1	2	3
3	1	1	2	2	2	1	0	1	2
3	2	2	1	1	2	2	1	2	3
2	3	1	0	0	0	2	3	2	3
2	3	1	0	0	0	1	2	2	3
2	2	1	0	0	0	1	1	1	2
3	3	2	1	1	1	2	2	2	3

Puzzles courtesy of euri.ca

Easy Sudoku

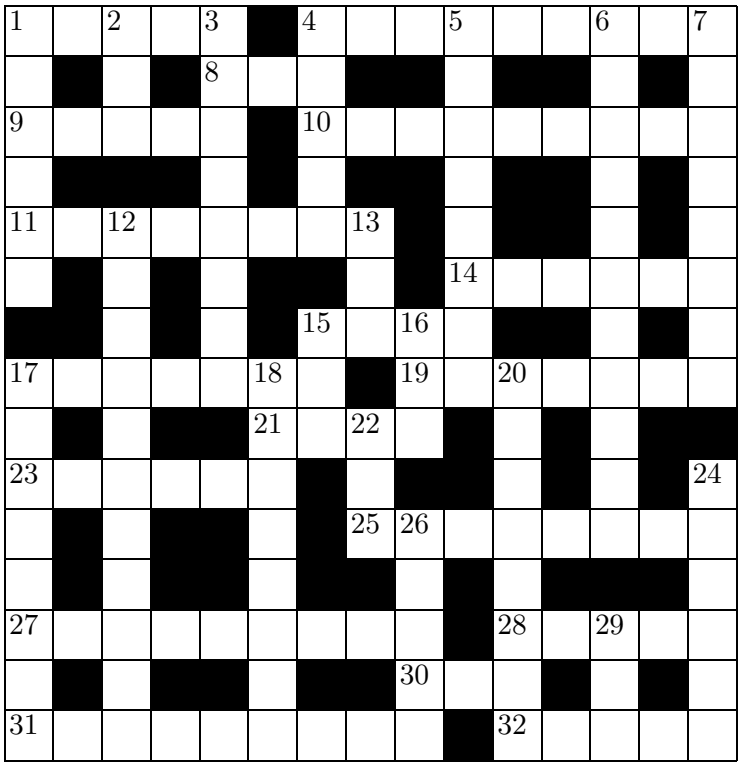
	4		6			9	3	2
8		2			9		1	
9		1	7		5	8		
				6				3
	8		9		3		5	
2				1				
		5	4		6	3		1
	9		1			4		5
3	1	4			2		6	

Hard Sudoku

		2				8	1	
	3			6	1			4
			2	8			5	
	2	5						
			7		3			
						2	9	
	5			3	4			
4			1	5			7	
	6	8				5		

Sudokus courtesy of websudoku.com

GRIDWORD



*grid*COMMENTS

Quidquid latine dictum sit, altum viditur.

Hello everyone, and welcome once again to a term of *grid*WORD. Unfortunately I have no cryptic clues for you this issue, although hopefully they will be present next issue. Nonetheless, there is still a prize for the most correct solution with the best answer to the *grid*QUESTION found in the BLACK BOX before next production night. Today's *grid*QUESTION is, "What is your quest?"

¬perki

Quick Clues

Across

1. Doughnut
4. Buggy accelerator
8. Wall-clinger
9. Fanatical
10. Ultimate degree
11. Unearthly
14. Wild horse
15. Ring of a bell
17. Skulker
19. Facsimile
21. Pig flesh
23. Greek goddess of warfare and wisdom
25. Offerings
27. Deliberately, sarcastically
28. Enraged
30. ___ Culpa
31. Isolated
32. Wanderer

Down

1. Quarry, objective
2. Chest bone
3. Of the distant stars
4. Serpent slain by Hercules
5. Configurable
6. Most divine
7. An excessive quantity
12. Inability to form blood clots
13. Shelter
15. Advantage
16. Large ship
17. Venomous mammal
18. Shoulder ornaments
20. Commoner
22. Decay
24. Rise up
26. Verse
29. Objective, goal