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Automated Systems May Have Caused Lion Air Crash

All 189 Passengers Dead as Flight 610 Plunges into the Pacific Ocean



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Plane PK-LQP, the plane involved in the crash, photographed here in September 2018



On 29 October, Lion Air Flight 610 plunged into the Pacific Ocean minutes after takeoff from Jakarta, Indonesia. The brand new Boeing 737-8 carried 189 passengers and crew, all of which perished, in the first ever crash of the new model of Boeing's best-selling short-haul passenger jet.

The aircraft involved in the incident - registration PK-LQP - was almost brand new, being delivered to Lion Air on 13 August 2018, but already had a troubled history. The airspeed indicator system, including the Angle-of-Attack (AOA) sensors had suffered issues for the previous flights, with maintenance workers inspecting and replacing the system before the penultimate flight. Even so, the issues still prevailed, with a

near-catastrophic failure on the Bali to Jakarta flight, the last journey of the doomed plane. Passengers reported heavy shaking and sudden changes in altitude, and the Pilots had called for a "pan-pan" emergency, one level below the dreaded "mayday". Though the pilots managed to complete the flight successfully, a 20 degree difference between the right and left AOA sensors was recorded.

On the morning of the 29th, the Captain of Flight 610 had asked the controller to return to Jakarta three minutes into the flight due to flight control problems. The request was immediately granted, but the plane never turned back. It immediately descended, with the altitude continuously fluctuating. Experts looking at the recorded data noted that Flight 610 was also travelling at unusually high air speeds during the entire descent, in excess of 300 knots when lower altitude flying is restricted to less than 250. The final recorded altitude of the aircraft was

760 metres, having dropped 910 metres just 10 minutes into the flight. Based on the debris, Indonesian authorities concluded that the plane was intact at the moment of collision and was travelling at high speed, with the engines still running. Workers on an offshore oil platform reported seeing the aircraft strike the water at a steep nose-down angle.

Investigations put the design of the new Boeing 737-8 under scrutiny. With the improvements in technology, automation has become a key factor in any modern aircraft systems. One of the new features in this generation of 737's is an emergency system designed to protect against stalls - statistically the most common cause of accidents. By reading information from the AOA sensors, the plane would automatically push its nose down for up to 10 seconds without the pilot's authorization. With erroneous data being fed from the sensors, it would thus be possible for the plane to pitch forward at a surprise to the

pilots. In 2008, Qantas Flight 72 experienced a similar mishap with an A330-301 utilizing a similar system. The aircraft made two sudden pitch down maneuvers outside of the pilots' commands, causing serious injuries to the passengers aboard. The pilots declared a Mayday and made an emergency landing.

The FAA and Boeing issued a statement on 6 November that such a scenario would be possible on new 737 models and recommended to all operators that should the aircraft enter an uncontrolled pitch-down, the flight crew should shut off the electricity powering the control surfaces in the tail. For the Lion Air flight, this information comes too late. Prompted with a sudden crisis, it is unlikely that even the most skilled pilots would intuitively think to manually override the aircraft's advanced control systems.

Letter From the Editor

Got Opinions About Opinions?



RAFIQ HABIB
EDITOR-IN-CHIEF

As usual, I want to begin this piece by thanking all the members of The Iron Warrior for making this issue possible and for contributing their time and opinions to bring a voice to Engineering students.

We have a special article from Gabrielle this issue chronicling the Waterloo team's experience at the 2018 World Mining Competition in Saskatoon, Saskatchewan. Her piece really makes you feel like you are right there with the team as they work through their 36 hour case-on-steroids and the networking that goes along with any competition.

We also have Parul's business column, this time teaching us about the start-up fundraising process. Kirsten's now-reoccurring carbon tax update is also back, keeping us up to date on the country's most protracted political disagreement.

Many will sympathize with Janny's piece on the struggle of rankings and how overwhelming the 4 days between ranking and offers feels. I'll leave the rest of the paper for you to explore, with one final thank you to Stone for creating yet another great crossword.

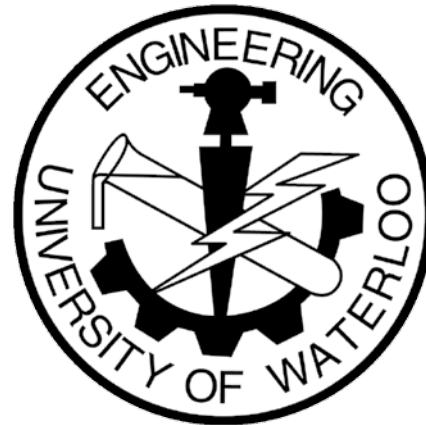
Ok, so to be perfectly honest, I had a very hard time thinking of a topic to write about this issue. Everything in

the news seems so bleak. In the last few weeks especially, it has become increasingly evident that there is so much division within the population. On Reddit and Twitter, it is becoming rarer to see anything but personal attacks whenever opinions are discussed and, when personal attacks fail, there are many hotbeds of inflammatory, "fake news" discussions that people can retreat to in order to ignore any facts they find uncomfortable.

With all the anger and false claims that have come to light heading up to the U.S. midterm elections and the days after it, it makes you wonder whether it is even safe anymore to express your own opinion. In a world where nearly everything you say or do ends up on the internet or on some sort of record, the division between public life and private life is breaking down for every single person. And no matter how hard you try to keep that division, there is no corner of the world that is completely free of prying eyes; "anonymous" tweeting board/forums, cloud based servers, and even free Wi-Fi check-ins record identifying information that others can obtain. The vast majority of us have absolutely nothing that we think we have any reason to hide, but that does not change this fact.

Where this begins to concern me is that today's age of information brings up the possibility that opinions or thoughts that we have shared in the past can be dug up and misconstrued or create a basis for assumptions that

no longer hold true (if they were ever true in the first place). I have opinions that I carry, but I wholeheartedly believe that these opinions will grow and change as I go through life. We are always encountering new perspectives and dimensions about all sorts of different ideas and topics. As university students, we cannot possibly be expected to finalize our beliefs anytime soon. In fact, we need the freedom to discuss controversial ideas, play devil's advocate, or ramble without fear of future repercussions or baseless attacks. After all, it is the civilized debate between well-thought arguments that allows for a third, more complete perspective to arise. And it is this third perspective that society needs to find again, to inspire in our political leaders and in the masses so that we can all grow for the better.



Politics Briefing

A New Government in NB and Scandal in Ontario



RAFIQ HABIB
EDITOR-IN-CHIEF

New Brunswick

On November 2, the New Brunswick Liberals' Speech from the Throne was defeated in a vote along party lines, with the Progressive Conservative and People's Alliance Parties voting it down 25-23 against the Liberal and Green Parties. Consequently, Liberal Premier Brian Gallant announced his resignation as Premier. The leader of the Progressive Conservative Party, former Finance Minister and Irving Oil executive Blaine Higgs has now been asked to test the confidence of the House to see if he can form government. Higgs has announced his cabinet and will present a Speech from the Throne in the coming weeks.

Ontario

There have been a number of Ontario politicians that have gotten into hot water over the last few weeks because of sexual misconduct allegations.

On November 2, it was announced that Andrew Kimber was leaving his job as a top advisor to Premier Doug Ford because of allegedly sending sexually charged messages to a fellow staff member. It was also announced that Jim Wilson, the Minister for Economic Development and Trade and long-time Member of Provincial Parliament for Simcoe-Grey, was resigning from his ministerial post and from the Progressive Conservative caucus to seek treatment for "addiction". It was later revealed that Wilson had in fact been asked to resign due to allegations of sexual misconduct levied against him as well. Premier Doug Ford claimed that the "addiction" reason was given to protect the identity of the staffer that had brought the complaint

against Wilson.

On November 6, Tony Clement, the Member of Parliament for Parry Sound-Muskoka and former President of the Treasury Board in Stephen Harper's government, announced that someone he had sent explicit photos to was trying to extort him for 50,000 Euros. He claimed that his was an isolated lapse in judgement and that he was bringing forward this situation so that the RCMP could investigate it to their full extent. On Thursday he changed his tune and admitted to "many acts of infidelity". He also revealed that he was the subject of another blackmailing attempt last August. Andrew Sheer, the Leader of the Conservative Party of Canada, immediately asked Clement to leave the party and resign from his position on the top secret National Security and Intelligence Committee of Parliamentarians in a swift fall from grace for an accomplished politician.

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The Woes of the Ontario Cannabis Store

BEVERLY VAZ
2T SOFTWARE

Since cannabis was legalized in Ontario on October 17, the Ontario Cannabis Store (OCS) has been the sole supplier of marijuana. This will be the case until April 1, 2019 when brick-and-mortar stores will be allowed to operate.

But the OCS has been in the limelight recently due to a multitude of its woes. For starters, there have been major delays with the delivery of orders. OCS uses Canada Post for its

delivery, and has cited their strike along with “unprecedented demand” as the reasons behind the week long delay. The office of the Ombudsman for Canada Post has received more than a thousand complaints regarding the delivery of orders. The complaints seem to revolve around delayed delivery and poor communication with customers. The office of the Ombudsman has created a special triage team to deal with the large amount of complaints.

But this isn't the only issue that

they have to face. On November 2, one of its suppliers – TerrAscend Canada – admitted to having provided the OCS with incorrect information, which led to mislabeled weed. This, along with the delays, has angered many customers.

The latest issue to add to the mountain of damage has been a news article citing that neither the government nor the store is saying how many people are employed by the store. An understaffed store, not a strike by Canada Post, could be a major factor in delayed delivery. The

agency's director has through an email said that “efficiencies and ways to further expand capacity at the OCS distribution facility have been made to help meet demand.” [1]

Hopefully, with these changes, OCS will be able to catch up to speed and tackle the issues that lurk before them soon.

[1] <https://www.cbc.ca/news/canada/toronto/ontario-cannabis-store-warehouse-staffing-1.4889388>

U.S. Midterms: The Statistics

Democrats Take Control of the House of Representatives while Republicans Hold the Senate

KIRSTEN EHLERS
1A BIOMEDICAL

Last week Americans headed to the polls in the the US midterms, voting on hundreds of different electoral races across the nation. Typically, midterm elections go without a huge splash, since they occur in the middle of Presidential terms. They are often sadly underrated events in American politics. However, with the controversy that is the Trump administration, the midterms this year were expected to bring about a lot of change, and consequently voters turned out in droves, breaking past midterm voter turnout records.

The Democrats won the house, ending a two-year streak with Republican control of government. They have a minority with 226 of the 435 seats available in Congress. However, republicans still have control of the Senate with 51 seats, and 3 seats heading to a recount (too close to call) or run-off vote (no candidate reaching 50% of the votes).

[1] The midterms also resulted in a plethora of records. It was the most expensive midterm election ever with an estimated \$5.2 billion spent on campaigns. [2] As well as it had an incredibly voter turnout ever with an estimated 49% of eligible voters casting their ballots, which has not occurred since 1966. In fact, it was the first midterm election with over 100 million votes. In contrast, the previous midterms in

2014 had the lowest voter turnout since World War II with 36.4 % of eligible voters going to the polls. [3] Another fun fact about voter turnout: 17% of voters were new voters, an dramatic increase from the 3% from 2010.[4]

Additionally, the number of candidates running for office reached a record high and included a record number of women, people of colour, and LGBTQ candidates.

There were a whole lot of firsts. Alexandria Ocasio-Cortez of New York, at age 29 became the youngest women ever elected to Congress. Deb Haaland of New Mexico and Sharice Davids of Kansas were elected as the first ever Native American congresswomen. Young Kim of California was elected as the first Korean-American woman to Congress. Rashida Tlaib of Michigan and Ilhan Omar of Minnesota became the first- ever Muslim congresswomen. Finally, Jared Polis of Colorado became the first openly gay governor in America.

The US midterms were quite exciting, but there is no rest for politics in America. Both parties have started preparing for the 2020 presidential elections.

[1] <https://www.theguardian.com/us-news/ng-interactive/2018/nov/06/midterm-elections-2018-live-results-latest-winners-and-seats>

[2] [https://www.businessinsider.com/2018-midterm-election-records-](https://www.businessinsider.com/2018-midterm-election-records-early-voting-women-lgbt-candidates-2018-11#early-voter-turnout-in-a-non-presidential-election-2)

[early-voting-women-lgbt-candidates-2018-11#early-voter-turnout-in-a-non-presidential-election-2](https://www.cbsnews.com/news/record-voter-turnout-in-2018-midterm-elections/)

[3] <https://www.cbsnews.com/news/record-voter-turnout-in-2018-midterm-elections/>

[4] <https://www.cbsnews.com/news/key-takeaways-from-the-2018-midterm-elections/>



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U.S. House Minority Leader Nancy Pelosi declares victory after the Democratic Party wins control of the House of Representatives following the November 6 midterm elections

A Series of Fortunate Events



THE START-UP BRIEFING

If a company can be thought of like a plant, its growth is fueled by rounds of funding provided at multiple strategic stages. Investors must be cautious in cherry-picking companies to make up their portfolios but also need to weather storms of competition. Of course, in an economically Darwinian fashion, the fittest (and most well funded) companies are likely to survive.

There are different rounds of funding that a company can hope to go through in order to live to infinity and beyond. It is necessary to note that prior to the company even thinking about growing, there must exist a foundation for the company to come into existence. This is where the pre-seed round comes into play. It is the earliest stage of funding; at this point

the founders develop a prototype they feel is worth presenting. The money for this round can come from their own pockets, their friends, their families, angel investors, or an incubator.

Once a start-up has gained traction, they are ready for their Series A round of funding. This is the first major round of funding and is the stage where stock options are issued to founders, employees, friends, families, and angel investors. At this stage, there is an expectation that the company has a business model and growth plan so it can attract venture capital firms that require some numerical projections to justify potential investments. The value of funding at this round can range from \$2 million to \$15 million and is usually led by one investor or firm. A significant portion of companies never make it past this round of funding - investors may back out, the model may not be sustainable, or they may simply lose the traction they previously gained.

If the sun shines down on the company, they may raise a Series B round.

At this stage, the company needs funding to expand and scale. Roles within the company become formalized and it is no longer possible for the founders to do all types of tasks. Scaling the company for a larger user base requires hiring talent - accordingly, salaries must be competitive. The volatility of start-up culture often dissuades experienced individuals who depend on financial stability in their professional and personal lives. Hence, it becomes increasingly important to offer a competitive compensation package. Although valuations vary between companies in different industries, companies can expect to receive anywhere from \$10 million to \$100 million dollars at the end of this round. Funding can come from venture capital firms, particularly those who focus on startups in later stages of growth.

Companies need to show that they have done well with the funding provided to them and that they are valued realistically. If their valuation decreases as each round progresses, investors may become uneasy despite

growth projections being accurately adjusted. These types of down rounds are tricky to bounce back from.

Series C funding allows the company to expand into newer markets, develop new products, and acquire businesses they feel will strategically aid them in staying competitive. This may be the last round of funding before the company decides to file for an Initial Public Offering (IPO) or get acquired. There is hard data to prove the belief in the product and in the company which often attracts the attention of banks and private equity firms.

The rest of the alphabet remains for subsequent series of funding. A company may have had a down round, failed public and investor expectation, or simply wanted to stay private for a longer period of time. Ultimately, the companies most firmly rooted in robust foundations weather out even the worst economic droughts.

Contextualizing the Great War

JANNY WANG
2A NANOTECHNOLOGY

The old tale behind World War I is familiar enough; some Austrian archduke was shot by a Serbian and consequently the nations of Europe went to war. The war ended on the eleventh of November, now known as Remembrance Day, and on the whole some very pretty poems and flowers were got from the debacle along with the speedy promise of another war sometime down the line.

The declaration of war caused an upsurge in patriotism in general, but one group particularly gung-ho in support of the war were the suffragettes. War was, in general, good for their cause; the absence of men at home led to an increase in women in the workplace, with all the social and economic power that implied. The British government released all women arrested for suffrage activities and the suffragettes generally ceased their more noisome activities during the war. After the war, the British government gave propertied women over the age of thirty the right to vote.

One of the most persistent images of World War One is that of the white feather;

women would hand them to healthy looking young lads who objected to being shot in Flanders' Fields, as a mark of shame and cowardice. The movement began in Britain, under the auspices of Admiral Charles Fitzgerald and turned into something of a fiasco, not least due to the habit of overzealous women of handing out feathers to essential public servants, discharged veterans, and soldiers on leave. In one instance, a woman attempted to give white feathers to a seaman who was on his way to receive the Victoria Cross.

In general, the white feather movement was unpopular because of its indiscriminate shaming, not because it was considered in bad taste to shame men for a sense of self-preservation. The majority of the anti-war sentiment came from the far left, not because they had any particularly strong opposition to shooting people, but because they objected to shooting people at the behest of what they perceived as a capitalist, bourgeoisie elite.

Most famously, the Bolsheviks made "Land, Bread, and Peace" their slogan during the revolution in Russia, and then spent the next five years fighting in a civil war in Russia. In other countries, the

socialists and anarchists mostly contented themselves with striking, marching, and getting arrested. Quebec nationalists and British colonies also generally opposed the war, or at least conscription. Like the far-left, they had no scruples with violence in general, but strenuously objected to dying on behalf of someone else's problem. Attempts to introduce conscription into Quebec prompted a riot, and British recruitment of locals in Nyasaland (now Malawi) was one of the major contributing factors to the Chilembwe Uprising.

Other sources of opposition to the war came from more familiar sources; churches and avowed pacifists. The League of Nations Society was formed in 1915 in Britain to negotiate an end to the war; it did nothing in that respect, but it was eventually

merged with the League of Free Nations Association to form the League of Nations, whereupon it did nothing in any respect. World War One took place within the context of the turmoil and agitation of the early twentieth century, and the emergency measured necessitated by war often exacerbated pre-existing social tensions. Let us remember not only those who fought and died in the war but those who, for whatever reason and however ineffectually, tried to bring an end to it.



Imperial War Museums under Fair Use

A group of suffragettes march in Great Britain prior to World War I.



DR. STEVEN J. COOKE

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Steven J. Cooke, PhD, is the Canada Research Chair in Fish Ecology and Conservation Physiology and the founding Director of the Canadian Centre for Evidence-Based Conservation. Cooke is the Chair of the Sea Lamprey Research Board of the Great Lakes Fishery Commission and Past President of the International Section of the American Fisheries Society. He is also a Fellow of the Royal Canadian Geographical Society, Fellow of the American Fisheries Society, Secretary of the College of the Royal Society of Canada. Cooke is a proud Waterloo alumnus (BES 1997; MSc 1999).

FREE PUBLIC LECTURE On the State of Freshwater Fish and Fisheries: Finding a Future for the Forgotten

Freshwater fish provide diverse ecosystem services. Yet, freshwater fish and fisheries are not often a national or regional governance priority and as a result, freshwater fisheries are undervalued and largely overlooked. Due to lack of reliable data, freshwater fisheries have never been part of any high profile global fisheries assessment and are notably absent from the Sustainable Development Goals. Using diverse examples from local to global, Cooke will provide a roadmap for elevating the status of freshwater fish and ensuring that moving forward freshwater fish and fisheries are valued and conserved to ensure that ecosystem services are maximized. Cooke is a dynamic speaker known for engaging audiences with his infectious passion for science, evidence-based environmental management, and all things fishy.

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The Carbon Tax Saga Continues...

KIRSTEN EHLERS
1A BIOMEDICAL

I've been following this carbon tax story for a while. Honestly, it was starting to seem a little repetitive. Throw in an argument about environment, another about business and then multiply that tenfold. However, a new development occurred last week, not in the progress of resolving this conflict (at this rate, it seems like that will never happen), but rather in the public perception of this whole mess. So this issue, let's look at another perspective of the carbon tax debate.

Last week, Maclean's released their December cover with the headline: "The resistance" below five white guys in suits. This is not the first image that comes to mind when one hears "resistance". Now if you haven't taken a look at the memes that were made as a result of this cover, I would highly recommend.

But that's not the point.

Now this carbon tax debate is being perceived as a battle between Trudeau and Jason Kenney, leader of United Conservative Party in Alberta, Saskatchewan Premier Scott Moe, Manitoba Premier Brian Pallister, Ontario Premier Doug Ford, and Conservative leader Andrew Scheer. It's almost cartoonish, similar to the portrayal of American politics these days.

However, the cover may actually hurt public perception of the Conservative party. Jim Farney, a political science professor at the university of Regina, pointed out, in an interview with CTV news that Maclean's may have intentionally portrayed the conservative party to represent the lack of diversity in the party [1]. This may hurt the Conservatives chances in more diverse communities come election time.

[1] <https://regina.ctvnews.ca/maclean-s-cover-sparking-online-controversy-1.4169525>

UWaterloo Rocks World Mining Competition



GABRIELLE KLEMT
3N GEOLOGICAL

15 teams, 36 hours, 1 plan crazy enough to work.

Picture this: it's been more than 24 hours since you left your bed, you've been on too many planes, spent way too long in airports, and changed time zones. Yet rather than sleeping, you're dressed in your business best, rubbing shoulders with teams from across the country and the globe, shaking the hands of sponsors from Nutrien and KPMG. So began this year's World Mining Competition. Waterloo has long been a participant in the World Mining Competition – formerly the Canadian Mining Competition – which takes place yearly in that mining capital Saskatoon. You might think the city an odd choice for a mining competition, at least you would until you learned that Saskatchewan is one of the biggest exporters of potash in the world (it's the stuff they make into industrial fertilizers, basically what civilization is based on today) as well as a major producer of Uranium. So, Saskatoon is kind of a big deal; now you know.

In the past, Waterloo's teams at the WMC have been made up of Software Engineers and Systems Design students, the teams who win the consulting category of Waterloo's Engineering Competition. This means that while these students are smart and capable people, they don't have a lot of experience with mining terminology. This year, we changed things up, disregarded the advice of the competition chairs to bring a mixture of students in mining, geology, and finance, and brought a team made up solely of Geological Engineers. We were ready to show up and get our butts kicked majestically, in fact we four were quite excited to be shown up by the better prepared teams from other schools and to learn a lot about the mining world that we never knew.

The competition is a case study-based deal where you're given a case including financial information on the company, geotechnical and geological details about the potential mine, and you're asked to respond to many questions and, in the end, to recommend: is the project viable or not? You may be thinking, because we sound like mining-type people – the foolish sorts of people who think 36-hour case studies about mines are fun – that Geological Engineering prepares you for the mining industry. It does not, not in the way a program like Mining Engineering would.

However, we were determined with our unique scrappy brand of UWaterloo determination that we would do the best we possibly could.

The first day was arguably the most exhausting. After stepping off our planes we spent several hours networking with sponsors and the other teams from Canada, Chile, Germany, the UK, and the USA. This was followed by a night event. At this point half our team of four had been up for about 40 hours, and although you may be yelling at your paper to “Go make Waterloo proud!” we did not make it to the second bar.

Day two started far too early for your humble home team. All of us are on the West Coast for co-op this term and the time difference did not work in our favour. All the same, we showed up brushed and respectable to receive the case study. We then holed up in our windowless conference room for the following 36 hours, leaving occasionally to steal coffee from the photographers' conference down the hall or to pick up our take-out. Every time we returned to our room it smelled more strongly of curry, Vietnamese food, and that strange smell stress seems to carry. As time progressed, we became more confident in our assessment that our mining venture would not only be a good idea, but a massive success: we were about to propose one of the world's biggest iron mines. It was my job to prove investing in a mine in highly unstable Angola would be a great idea (no offense to any Angolans out there, but let's be honest, the country has seen better times). However, by Friday night we had discovered several mistakes in our spreadsheets which changed completely our original estimates for the mine. Everything was falling apart; it was a disaster. We fell into bed sometime early Saturday morning hoping that with our couple hours of sleep we would find the solution we needed to make our mine profitable once more.

Saturday dawned, and things started to look up again... but not for long. We flip-flopped on the outcome we wanted to present. It just couldn't be done, could it? In the end we decided that we had to come to a consensus so we could begin to create our presentation. We chose the risky path of recommending not to acquire the mine, at a mining competition. Ten minutes before the 10 pm deadline Saturday night, we submitted our PowerPoint. The next hour was spent eating another Vietnamese takeout while watching Brooklyn 99. Because treat yo' self. We then practiced our presentation frantically for several hours before dropping into the sleep of the dead.



Gabrielle Klemt

Waterloo's team at the 2018 World Mining Competition (from left to right): Grant Mitchell, Beverly Yang, Gabrielle Klemt, and Andrew Tsai.

We woke up what felt like only minutes later, but was in fact probably four hours, to continue practicing. Then we put on our suits and made our way to the University of Saskatchewan. We were in the first heat, meaning we got our presentation out of the way almost immediately and could relax for the rest of the day.

After lunch they announced the top five teams that would proceed to the finals. We were interested to see the other presentations and hear what they recommended. To our extreme shock and horror, we made it to the top five. I went into shock and we laughed while repeating that someone had made a mistake as we were ushered through to the next presentation building. This was our worst-case scenario; presenting our crazy idea to a panel of judges was one thing, but to an entire room full of students and sponsors was quite another. The judges did not go

easy, drilling us on topics we had not even considered during the unprotected part of our presentation, and we struggled to stay on topic and skillfully deflect the questions. We really worked as a cohesive team and picked answers up when others weren't as prepared on a particular issue. It was a dramatic 25 minutes and we finished just as the timer was counting down the seconds.

We didn't come first, we didn't even come top three, but out of 15 teams we were the only team to say no, and that was enough. The gala event was that evening and when we found out how the teams placed in the top three, we were legitimately excited for the winning teams. We had all been through hell together and it forced us to make fast friends. I won't easily forget this weekend, it was an amazing experience and it felt like a true win for Waterloo all the same.

No End in Sight for Gun Violence in America

BEVERLY VAZ
2T SOFTWARE

On October 27, an armed assailant opened fire on a peaceful Jewish gathering at the Tree Of Life congregation in Squirrel Hill – a neighborhood with a dominant Jewish population. The accused, Robert D. Bowers, was armed with an AR 15-style assault rifle and at least 3 handguns. Authorities say the accused had no previous criminal record, but that there were signs that he harbored anti-Semitic feelings through posts on social media sites.

The shooting claimed the lives of 11 people – including a 90-year old woman and a couple in their 80s – and left at least half a dozen injured. Fortunately, no children were killed. The day started off as a normal Saturday morning at the synagogue, but things had taken an ugly

twist by 9:54 am when an emergency call had to be placed about a shooter. About 5 minutes later, an officer who was on the perimeter reported that they were under fire. A little after 10 am, a dispatch was sent instructing all units to arrive at the scene. By this time, the suspect had killed 11 people and was on his way out. When he spotted law enforcement officials, he started firing at them and then moved back in for cover. By 10:30 am, tactical teams entered the synagogue. Six minutes later, an officer described finding 4 bodies in the atrium, and, a couple of minutes later 4 more bodies were reported to be found. At close to eleven, officers located the position of the suspect on the third floor. A little after that, at 11:08am, the suspect surrendered. The weeks following this incident have been filled with funerals, memorial services, visits from notable people, and, talk about making things

right.

The way things unfolded at Pittsburgh may seem shocking, but what's more appalling is the fact that not even a mere 2 weeks afterward, there was another mass shooting – this time in California. A gunman opened fire at the Borderline Bar & Grill in Thousand Oaks, California on the night of November 7, killing 12 people and injuring at least a dozen others. The shooter has been identified as David Long, an ex-marine. Mr. Long has had previous run-ins with law enforcement, including one earlier this year.

On the night of the incident, the police received the first call around 11:20 pm. The gunman is said to have killed a bouncer and security guard as he forced his way into the bar. The police arrived at the location a couple of minutes after receiving the call. The County Sherriff and a Highway Patrol Officer too arrived,

as more shots continued to be heard. The County Sherriff was injured in the attack and later succumbed to his wounds at the hospital.

By the time the officers entered the bar, the gunman had killed himself. The gun he used was a .45-caliber Glock handgun with an extended magazine. The use of an extended magazine is illegal in California.

Borderline Bar & Grill is close to the California Lutheran University and attracts many students, hence, many of the victims are suspected to be in the age range of 21 to 26 years. Amidst all of this, it may seem that people are losing their humane side to things with such acts of violence. However, as dismal as this may seem, there is still hope in humanity. In the words of the Jewish nurse who treated Mr. Bowers, “My care is given through kindness; my actions are measured with empathy”.

The Story of the Least Successful Assassination in History

JANNY WANG
2A NANOTECHNOLOGY

In belated honour of the release of *Assassin's Creed: Odyssey*, I would like to take a moment to commemorate possibly the least successful assassination known to history.

The protagonists are Emma Goldman and her boyfriend, Alexander Berkman. Both of them would go on to be fairly well known political activists in America and Europe. For the present moment, they were two dirt poor youths who co-owned an ice cream shop and hung about radical speakers.

America was undergoing one of her periodic labour disputes. The Carnegie Steel Company and the factory manager, Henry Clay Fick, was involved in a protracted argument with striking workers. The typical stakes were somewhat exacerbated by Pinkertons and a plethora of guns, and the situation devolved into a mild shootout, which somewhat tarnished

the reputation of Mr. Fick and Mr. Carnegie.

Emma and Alexander formulated a plan of exquisite stupidity: Alexander would shoot Mr. Fick, whereupon the workers of America would be struck by awed inspiration and spontaneously revolt.

The pair went off to New York, where they attempted to build a bomb, failed, and rapidly ran out of money.

Alexander needed twenty dollars for a gun and a new suit of clothes; Emma, in a fit of heroism, resolved to prostitute herself.

She wandered about the street corner till she caught a man's eye and followed him into a bar, whereupon he told her that she had not the knack for it, gave her ten dollars and a beer, and bade her go home. The rest of the money was procured, somewhat less heroically, by Emma going cap in hand to her sister.

Having bought a gun and a suit, Alexander made his way to Mr. Fick's office, whereupon he contrived to shoot



Jewish Current under Fair use

Emma Goldman (L) and Alexander Berkman, pictured above in these undated photos

Mr. Fick three times without killing him. The striking workers, attracted to the noise, ventured onto the scene and were neither roused nor inspired by what they saw; the whole drama was capped off by Alexander being beaten up, restrained, and handed over to the

police.

The crowning garnish of the affair was - when the plot was denounced at an anarchist rally - Emma strode onto the stage, hit the speaker with a horse whip and was ejected from the rally.

China Accused of Stealing Research From Canadian Universities for Military Use

JANNY WANG
2A NANOTECHNOLOGY

According to a recent report by the *Globe and Mail*, Canadian universities - including the University of Waterloo - may have been inadvertently collaborating with Chinese scholars with strong military or Party ties. The resultant research oft produces 'dual-use' technology, which might be adapted for a knockoff iPhone or a missile control system.

A major security concern is posed by the fact that Chinese researchers have a habit of obscuring their affiliations with any organizations that might be considered less than kosher by Canadian security. An entire fictitious institute exists for this purpose; the Zhengzhou Information Science and Technology Institute is worthily attested to in over 1,300 peer reviewed articles, but seems

skimpier on the brick-and-mortar side of reality. Other researchers simply use the more banal method of neglecting to mention military affiliations.

One stand out example of this duplicity is Yu Hong-Yi, an optics expert and veteran of Sino-Canadian collaboration. He is a member of the reverend Zhengzhou Institute, and either a Colonel of the People's Liberation Army or an unlikely cosplayer.

A wide array of fields have been targeted by Chinese military intelligence, including materials science, quantum physics, and information technology. This strategy is poetically called and ineptly translated as "picking flowers in foreign lands to make honey in China". One missive issued by the PRC urged graduate students going abroad to consider the potential value of their research to the Chinese military and plan out their studies accordingly.



Zhengzhou Insitute under Fair use

The only photo of the Zhengzhou Science and Technology Institute, found on the university's extremely basic website.

Canadian universities do not seem to be in the business of performing background checks on foreign researchers; potential security risks, they say, are the domain of the federal government. The federal

government has not said anything.

China, for its part, settled any concerns one might nurse by insisting that the accusations were "ridiculous and groundless".

The Anguish of Rankings

JANNY WANG
2A NANOTECHNOLOGY

The student body of the University of Waterloo had a collective panic attack at precisely noon on the second of November, which continued for some dozen minutes until WaterlooWorks proceeded to live up to its names. The attack continued, in somewhat abated form, until the following Monday afternoon, when it reawakened with vigour.

The search for jobs and the looming fear of unemployment or menial labour cannot but be stressful- there is very little the university can do in that regard, except to proffer helpful speeches now and again. An additional source of uncertainty is introduced, however, by the ranking system of WaterlooWorks.

For the benefit of the uninducted; if an employer rates you a one, then it is plainly shown in the light of day. If they rate you between two and ten, it shows merely as Ranked, and the student is left

to meditate upon the permutations and probabilities therein.

This is a trial of the spirit and the imagination; oft trotted is out is the parable of the Foolish Goose, who, seeking greener pastures is California, gambled upon the grace of the algorithm and ended in seeking recourse at Employment Canada. The natural counterpoint is the parable of the Wise Goose, who humbly ranked everything a one and thereby avoided the trials of Continuous.

There is a third parable, a sort of heresy shunned by the officials and whispered only in dark corridors; the parable of the Anxious Goose, who ranked everything a one and then spent his summer as an

Expert Fertilizer Handler in the north of Manitoba.

The present ranking system plays upon the natural fear of the students to incentivize us to bestow freely the rank of one and to accept any offers we might receive. It is impossible to know whether the employer considered you a close second or a lowly tenth and compared with the looming spectre of unemployment, a semester in swampland seems almost palatable.

All this is to the great advantage of the employers, who are tolerably assured of one neurotic per posting, but it confers no very great boon upon the health and spirits of the neurotic.

Not being able to see the ranking means that students are groping in the dark for a sensible strategy to maximize their chances; at our precarious stage, when money is scarce and experience paltry, missing out on a potential co-op because of a twist of the algorithm presents a significant economic, professional, and often mental detriment.

Allowing students to see their rankings would allow them to make an informed decision when ranking employers. This will by no means silence the gnashing of teeth and rending of cloth common to this era, but it would prevent students from following the path of both the Foolish and the Anxious Geese.



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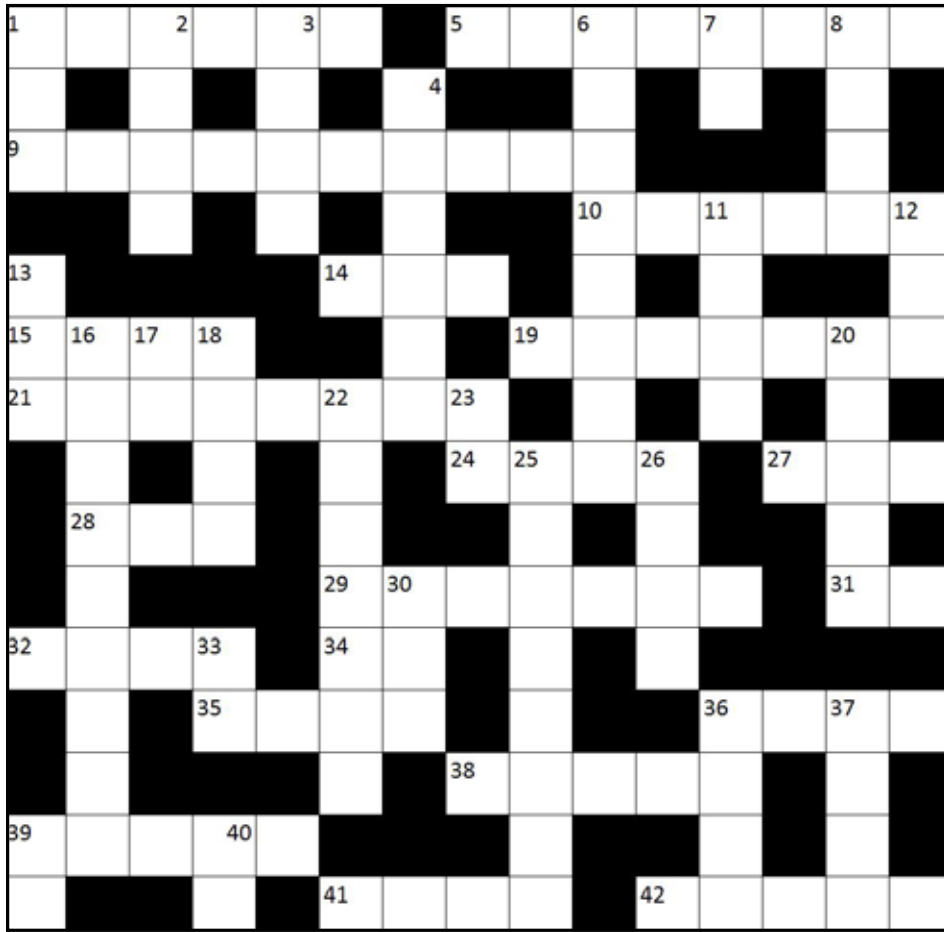
Upcoming Events Calendar

Upcoming Events Calendar							
Wednesday November 14 Council Meeting #4 <small>5:30 PM - 7:30 PM</small>	Thursday November 15 Bubble Soccer Leadership Info Night <small>4:30 PM - 6:00 PM</small> B*tch and Stitch <small>6:00 PM - 9:00 PM</small>	Friday November 16	Saturday November 17 Santa Claus Parade Semi-Formal <small>9:00 PM - 12:00 AM, Wif's</small>	Sunday November 18 Ed Outreach	Monday November 19 Free Food <small>11:30 AM - 12:30 PM</small> Engiqueers <small>6:00 PM - 9:00 PM, POETS</small>	Tuesday November 20	Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca/event-calendar/
Wednesday November 21 WiE Hackathon <small>5:30 PM - 7:30 PM</small>	Thursday November 22 Director Appreciation	Friday November 23 Lan Party Winter Clothing Drive Ends	Saturday November 24	Sunday November 25 Dungeons & Dragons <small>12:00 PM - 3:00 PM, POETS</small>	Monday November 26 Engiqueers <small>6:00 PM - 9:00 PM, POETS</small>	Tuesday November 27 RuPaul Drag Race Viewing Party <small>6:00 PM - 8:00 PM, POETS</small>	

The Iron Crossword

Mixed Varieties

STONE HE
2A MECHANICAL



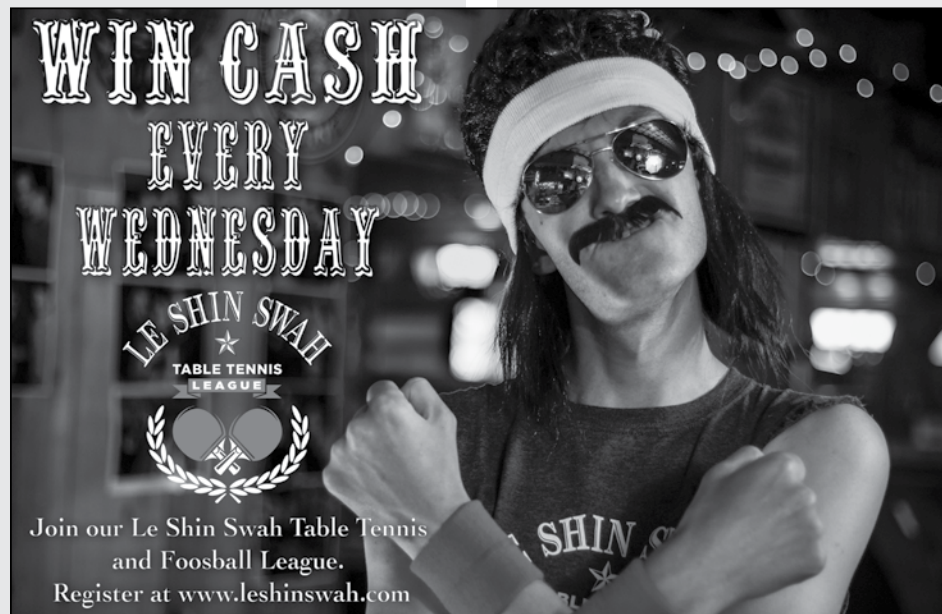
ACROSS

- 1. Fast as a Shark
- 5. The thumbs up signal
- 9. Another word for riding
- 10. Place of Worship
- 11. In the _ it doesn't even matter.
- 15. Svenska furniture
- 19. One of the Teutonic Big Four.
- 21. I don't chuckle.
- 24. Interplanetary warriors' band.
- 27. /
- 28. 1:1000000 scale map for navigation.
- 29. Dimebag's band.
- 31. Romanization of my (crossword creator) last name but Cantonese.
- 32. Dried up grass that vibrates very fast.
- 34. Commonly brought up in the gun control debate (abbrv).
- 35. A fruit and it's Indigo.
- 36. I'm running out of ideas. I _ help.
- 38. The top of the pack.
- 39. Next to Togo in Africa.

- 41. Flightless and extinct.
- 42. see 19, also city that was burned.

DOWN

- 1. Bong, Galland, and Bishop were this.
- 2. Operation Overlord objective, that took a month and a half to take.
- 3. Dead or Alive singer
- 4. Does grunge rhyme with this?
- 6. Birthplace of a certain Muskrat.
- 7. Abbreviation of the most .
- 8. Bibilocal 'first blood'.
- 11. Another word for the short-form of Richard.
- 12. The Who concerts can destroy this (not instruments).
- 13. Messaging app originated from Uwaterloo.
- 16. Latin meaning for root word for science.
- 17. Lead by France and Germany.
- 18. Band got its name from a sewing machine label.
- 20. Swedish band that took it's name from a fictional city.
- 22. Randy Rhoads played on this.
- 23. 22 but lighter.
- 25. Where are you now?
- 26. An engineer that doesn't drink .
- 30. Weapon and body part.
- 33. Tallest building on campus.
- 36. Engineering faculty's 'exclave'.
- 37. Heat added.
- 39. Conjugations of this verb barely resembles it.
- 40. Pennywise.

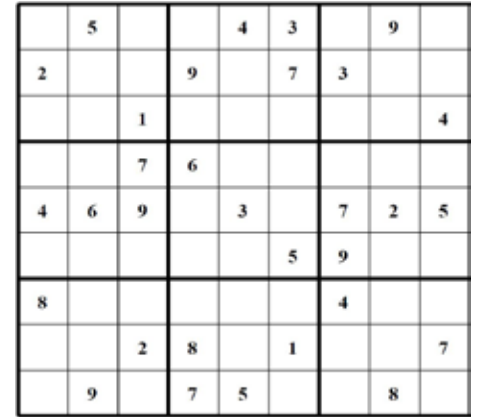


Sudoku

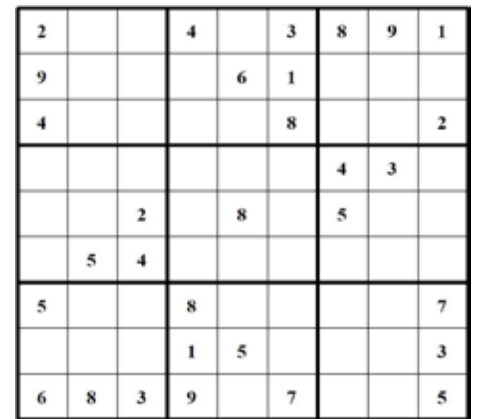
#2018-14

RAFIQ HABIB
EDITOR-IN-CHIEF

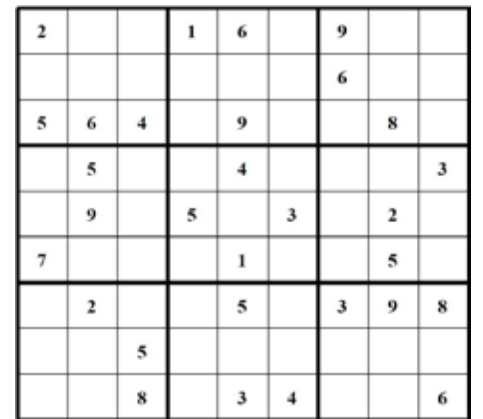
Easy



Medium



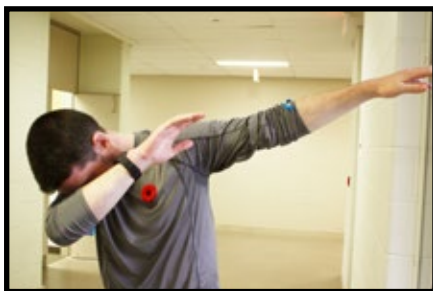
Hard



Solutions for previous crosswords can be found on *The Iron Warrior's* website at iwarrior.uwaterloo.ca/distractions.

THE IRON INQUISITION
Stone He - 2A Mechanical

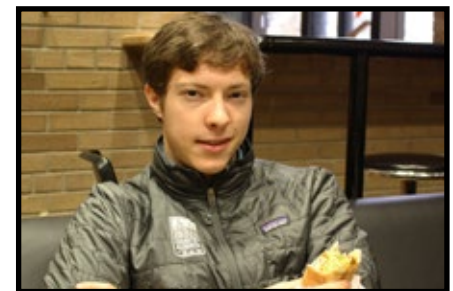
"Why is Everything Moving so Fast?"



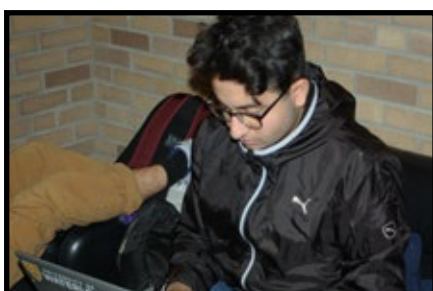
"Because we're going too slow."
Patrick McKay, 2A Mechanical



"Life is short so in the moment it flies by."
Akila Visram, 1A Geological



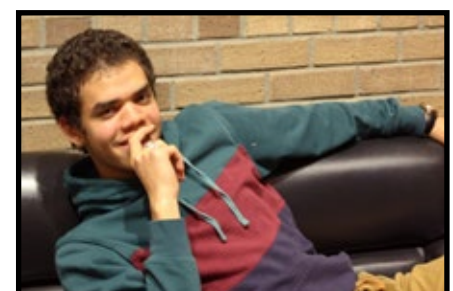
"High Reynolds number."
Stefan Martin, 3B Mechanical



"I'm just swamped by numbers so I just don't pay attention to time anymore."
Ali Al-Saeed, 1A Civil



"That's an unanswerable question as there are many perspectives of what is fast ..."
Nikhil Melgiri, 2A Mechanical



"Not getting enough sleep."
Aly El Refai, 1A Civil