FANCY SEEING YOU HERE.

O'SNAP SEPTEMBER '21

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WELCOME BACK TO O'SNAP



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O'SNAP

Guelph Engineering Society's Monthly Newspaper

Welcome Back!

Liv Gair, O'Snap Coordinator

Hi Gryphons!

Wow, what a weird 18 months it's been, huh?

If you don't know me yet, my name is Liv - I'm the O'Snap Coordinator on this year's EngSoc! I'm starting my second year of biomedical engineering, and our first day back will be about my sixth time on campus, ever. If you're looking for me and I'm not studying, you can find me anywhere with food.

This year, O'Snap might look a little different than you're used to. One of my favourite things about majoring in engineering here at Guelph has been getting to hang around people that are so excited to learn new things and share their knowledge with other people. I don't see why O'Snap can't be an extension of that attitude, so you'll find all kinds of submissions in here, from light-hearted, opinion-based **lists** to fact-based **research commentaries,** to totally subjective **personal reflections**. If you're an incoming first year, your O-Week issue of O'Snap will have you totally versed in all this already.

If you like what you see in this O'Snap, or have an idea for something totally new, we need writers for our October and November issues! Write about anything that interests you, pick a category (**personal reflection**, **interest piece**, **research commentary**, **list**), and email it to **ogair@uoguelph.ca**.

If you have any questions about what or how to submit, or you just want to chat, feel free to get in touch with me (at the same email)!

Have a great first week back, Gryphons! I can't wait to see what we get up to together this year.

Cheers + gears,

Liv



hiya ;)

Baking My Way Through Quarantine

by Mia Hsu, 3rd Year Biomedical Engineering

Hi Gryphons! My name is Mia and I'm going into my third year of biomed engineering this fall! I'm so excited to go back to campus in September as the university slowly begins to open up. Quarantine definitely presented its challenges as I'm sure everyone can attest to, but it also gave me opportunities to explore newfound hobbies. That's exactly what I'm writing about today; who knew the silver lining of being stuck at home would be test batches of frozen cookie dough and Hawaiian doughnuts! I've always liked baking (mostly because I have a crazy sweet tooth) but my real interest started in early quarantine of last year, around June 2020. That's when my family and I discovered *The Great Canadian Baking Show*. We got pretty invested and I quickly realized how much chemistry and science was actually involved in baking! Everything from the ingredients, to the mixing time, to the oven temperature affects the final product. There are so many variables that contribute to the perfect dessert. Baking has a reputation for being so precise that it's not fun, but once you understand what each ingredient does and basic baking techniques, you can leverage that knowledge to experiment with your own recipes. That's what I enjoy most, the experimentation and creativity that happens in the kitchen.

I began researching recipes and reading blog posts to learn more about what methods were required for different categories of sweets. I started with desserts like bars and cookies which are much less finicky than something like a French croissant, which can take years to perfect (I'm definitely still working at that one!) Gradually, I levelled up to more challenging recipes like scones, cakes, pastry cream, pies, and different types of bread.

After subjecting my family and friends to a copious amount of taste testing, I gained more confidence in the kitchen and began to get more creative with flavours. I take inspiration from Christina Tosi who is not only a revolutionary pastry chef and founder of New York's Milk Bar but is also incredibly intelligent with a university background in mathematics. So, you can see why I'm such a big fan! She's the inventor of the "Compost Cookie" and the brain behind flavours like "Popcorn Cake".

After creating some of my own concoctions, and after seeing that quarantine wouldn't end any time soon, I filled my time by keeping up a baking Instagram account and sharing my recipes on a free Wix website that I had so much fun creating. Over the summer, I began selling my treats and developed some regular customers, mostly from my church. I found myself operating my own kind of small business and even had the opportunity to have a fundraising week! All this to say that it's never too late to learn something new and devote time to doing what you enjoy.

Baking has become such a great creative outlet and stress reliever, because a nice side plate of cookies can make a circuits study session just that much better. My favourite part of baking is being able to share the results with friends and family especially during these difficult times - a little sugar does a lot in terms of lifting spirits!

To sign off, I'll leave you with some tips for building YOUR own perfect chocolate chip cookie, since everyone likes theirs a little different!

For a cakey cookie:
- Use cold or room temperature butter and cream it with eggs until light in colour and fluffy
- A little less sugar in the butter to sugar ratio will prevent your cookie from spreading too much
- Bake at 350 F to ensure a slower, more even bake throughout the cookie

For a crisp, thin cookie:
- Use a good amount of white sugar in addition to brown sugar (white sugar makes a crisper, flatter cookie)
- Increase your sugar in the sugar to butter ratio slightly
- Use melted butter

For a soft and chewy cookie:
- Use melted butter
- Use a higher ratio of brown sugar over white sugar

For a crisp on the outside, gooey on the inside cookie:
- Use a 1:3 ratio of white to brown sugar
- Bake at a higher temp (375 F – 400 F) to get crisp edges and a soft and gooey center
- Use melted butter









See Spot Run! Run, Spot, Run!

by Hayden Fretz, Communications Coordinator

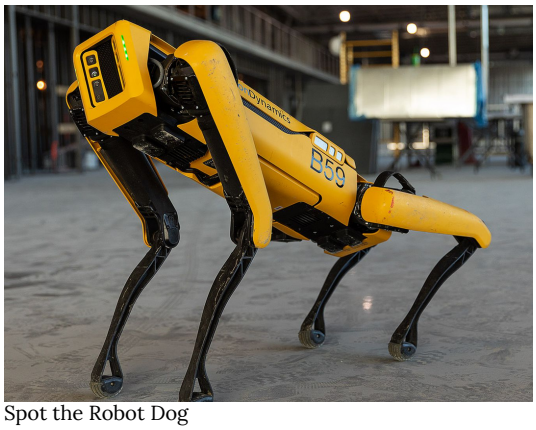
Go fetch! Roll over! Okay, now shake a paw? – That is, if paw is the right word...

No doubt by now you've seen videos of Boston Dynamics' incredible (although slightly daunting) progress in robotics and automation. Maybe you've even been lucky enough to see it in person. For those less vexed in the popular culture of science fiction turned reality, what exactly would you picture if I were to tell you to imagine a robot dog? If you dig real deep into your childhood memories, perhaps a blurry image of an i-Dog would surface – or maybe a picture of Goddard from *Jimmy Neutron*?



Goddard (bottom right - Pinterest) and an i-Dog (top left - Entertainment Earth)

Well, at least that's what would have crossed my mind! This time, as it often proves to be, truth is indeed stranger than fiction – because if you asked me as a 10-year-old what the future of dog technology would hold, I certainly would not have guessed THIS:



Spot the Robot Dog
photo by Becca Farsace / The Verge



Spot inspecting a mine in Kidd Creek, near Timmins Ontario
photo by Boston Dynamics

Is this the fascinating lovechild of multiple Keanu Reeves movies? Although neither *The Matrix* nor *John Wick* were strangers to spending large sums of money on their productions, if you can spare it, Boston Dynamics' Spot can now be yours for only **$75,000 USD**.

Pocket change right?

So, while it may be in our best interests to stick it out (at least for a while) with the furry friends we already have, that doesn't mean we can't have fun with android's best friend in the meantime. (But let's not fool ourselves. Some of the most fun dogs in our lives have always been our friends' dogs anyway!)

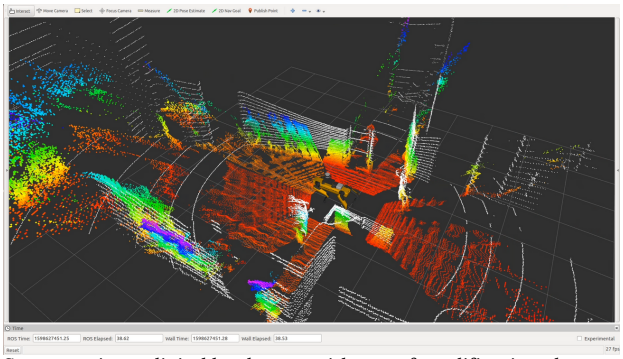
What exactly can we get Spot to do then? (In other words, what old tricks can we teach a new dog?)

Inspection (or going where humanity dare not go... alone)

Why put a worker in more danger than they face every day? At a staggering maximum depth of 3km, many hazards such as, gas leaks, and tunnel collapses lurk below the surface of mines around the world. As a robot, Spot is much better suited to the extremes and risks of these professions. Even if it isn't possible to eliminate all risks for workers, Spot can reduce the frequency of injuries or deaths, raising the bar for work conditions around the world.

Cartography (or the boujee word for mapping things)

Forget photo maps and sonar! Sometimes the best defence is a good offense. With the right tools and software loaded, Spot can be sent into the unknown first to digitally map practically any terrain it passes over. This is a particularly exciting development in robotics – while humans are certainly capable of recording their own paths, and robots following a predetermined path, the ability to combine both tasks is still on the cutting edge of technology. The prospect of having a robot explore treacherous terrain, and in turn develop a comprehensive form of navigation – all in real time – is certainly enough to make any scout and engineer alike salivate with anticipation of the possibilities.



Spot creating a digital landscape with use of modifications by *Clearpath Robotics*
photo by Clearpath Robotics



Spot equipped with its articulated arm capable of performing tasks such as picking up small objects and opening doors.
source: Fortune

Now a couple points for the specs nerds... Or future dog show judges...

Spot can traverse terrain at a maximum speed of 1.6 m/s on slopes of an angle up to +/- 30°
or carry weight of up to 14kg (30.9lbs) ...all while remaining functional within a temperature range of -20 to 45°C (-4 to 113°F)!

The Bottom Line:

While currently less capable in some respects than our current canine coworkers, Spot undeniably displays considerable merit in fields where the environment is dangerous or unmapped. Although its current price may be a little high for most of us who could just use a companion, it may not be long before Spot is house-trained to work with those who require assisted living (Some service dogs are estimated to cost up to $50,000 CAD over their working lifetime – not a long shot from Spot 's current price tag). In the meantime, keep an eye out for Spot's adventures anywhere the world could use an extra set of robo-paws! – And for the love of all things engineering (and dance), take a few minutes of your day to check out this unbelievable – no, seriously it looks like CGI – performance by Boston Dynamics (and *Spot* of course!)

Hot Tips for Getting Back into the Groove of School

by Anastasiya Kubrak, 3rd year BIO/BIOM Rep

After a long summer filled with freedom and a lack of responsibilities, you may find yourself wondering how you'll get back into the swing of school. Well, here are a couple of tips and tricks that may help you feel a little more ready to take on Guelph.

1) Get into a routine

It's tricky going from summer life to back to studying, so start to slowly get into a routine that works for you. It's not always easy jumping right back into your studies so ease yourself into it and try to maintain a steady balance with school, friends, and other extra-curricular activities. Start with the time you wake up; waking up earlier will give you a better start to your day and give you time to let yourself plan out your day.

2) Make a friend in every class

It's always good to have someone in your class that you can study with and relate to. Studying with others can only help motivate you to make time to do your homework, but they can also give you a different perspective on the content being taught. You may find that it helps you learn better when you do it with friends.

3) Organize and plan ahead

Calendars, day planners, and app reminders will be your best friends during the school year, they will always make sure that you are keeping up to date with the important due dates and events. Find out what method works best for you. Checking your calendar every day will help you manage what you will need to do on your daily schedule and will help when it comes to midterms and exams. Set goals for yourself when planning so you won't be overwhelmed or cramped for time. Even schedule the little things you have in mind such as going to the gym or having dinner with friends.

4) Create a workspace that keeps you motivated to do work

Your workspace is where the magic happens, so you must pick the space that works for you. Whether it be in your room at home, library, or other destinations. The most important thing to keep in mind is that you want to be able to focus and learn efficiently, so pick areas that won't distract you.

5) Make time for yourself

It is always important to make sure you are not only keeping up with school but your mental being as well. Take time to check in on how you're doing and take a break occasionally. You deserve to let yourself relax by going for a walk, meditating, listening to music, reading, or put on your favourite tv show.

6) Get active

It's easy to fall victim to the comfort of your bed, but one of the most important things to do is keep your body moving so your mind moves quicker. Get outside and go for a walk, run, or bike ride. If you're living in Guelph there are many trails through the city that you can check out. Even Sitting outside can reduce blood pressure, lower heart rate, and decrease cortisol levels.

It is an exciting time to be a future engineer!

The Ontario Society of Professional Engineers (OSPE) supports future engineers by advocating for more investment in infrastructure, research and development, and innovation funding programs which will create more co-op jobs for students' career development, and more full-time work for engineering graduates.

OSPE also offers FREE membership to students currently enrolled in an accredited engineering degree program in Ontario. Advance your career and support your profession by joining OSPE today.



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we work with employers to add some great co-op & internship opportunities to our Career Centre page.

Mentorship
Whether you're looking for guidance on navigating your engineering journey or strengthening your leadership and networking skills, OSPE's Mentorship Program allows you to connect with a whole host of talented and experienced professionals.

Ambassador Program
Become a volunteer and develop new skills, contribute to important issues or make a positive impact within the engineering profession.

SEPTEMBER 2021 VOL. 1

Packing up First Year and Moving into Second Year

by Lauryn Lim, 2nd Year Rep

Hello Gryphons!

Just like that, F20/W21 flew by and it's now F21! The start of a second year, yet having little to no experience being on campus or walking between classes and going to late night labs makes it a strange transition for us second years. Some of us have skipped the residence stepping stone and made a huge step into getting a place with roommates. I

'm sure most of us are itching to start off our year with a bang, and don't be afraid to. You may think of this time as "First Year Part 2" and that's not such a bad thing. We are in a unique situation that allows for interesting chapters in our life. Everyday is a new learning experience.

Here are some ways I think you can make your second year fruitful, balanced, and memorable:
1. Take breaks from screens. Go walk outside, meet up with friends. It's cliché but a change of scenery does wonders for the brain and getting fresh air can help ground you.

2. Plan ahead and plan well with the online learning courses. Use that planner sitting in the bottom of your bag, or try out a digital calendar (especially since some meeting links get automatically scheduled). Sure, you can cram in those lessons Friday night at 3am but booking a timeslot for them and sticking to it can make your life so much better.

3. On a related note, **watching lectures at 2x speed is better than not watching them at all** and then cramming 20 hours of content the night before an exam, but again, pre-planning can avoid this. (Hey even 1.25x or 1.5x makes a difference if you're short on time but really want to focus more).

4. Look for resources early and actually use them. Checking them out before the rush of school starts and you drown in work can help you recall the resources in times of need. Resources can mean anything from course tips, upper years who can share their wisdom, and health (mental and physical).

5. Don't forget to take care of yourself. Find an activity that you can use as a de-stressor (naps don't count!) and block time into your schedule for "me-time". You might find that you're more productive during work periods if you know you have guaranteed fun-time later on the day/week. Of course, engineering is demanding but I promise your overall health has an impact on your experience at school/ in class.

6. You're here for a reason. Imposter syndrome and questioning yourself can spiral downwards quickly, but remember you've already made it through your first year, including new challenges that no generation had before. You've probably heard that "no one really knows what they're doing", and I think that's okay because we are here at school to learn. That's the point.

7. Remember to have a good time. You've witnessed yourself how fast first year went by, and I'm going to bet that second year might happen just as fast. It' important to remember we go to school not for just academics, but also to develop as a person. Go out when you can, meet people, try new things, and make some memories. Especially after first-year online, there's some lost time to make up!

If you made it this far, I encourage you to take some time and reflect on your first year! All the good and bad experiences offer valuable lessons. These will be tailored to your life and you can use them to improve your second year (and beyond)! I wish you luck and happiness!



COME BACK NOW, YA HEAR?