

Brave Control Solutions Inc., a Windsor based engineering firm, welcomed four co-op students and one intern onto their team for the 2016 winter semester. That might not seem like such an impressive number, at least not until you consider the fact that Brave currently has only 40 full time employees and bringing just those five students on board amounted to more than a 10% increase in their staff.



From left: Jacob Prodan, William Oudomsouk, Crystal Roma, Mohamed Ramal, Lucas Chevalier

In order to accommodate the students, Brave had to rearrange their office to bring in more desks. “We treat our co-op students at the same level as our control specialists.” says Brave owner Brent McPhail. “They are subject to all the same perks, privileges, training, and opportunities we award our full-time employees. We are a very different company and we try to offer a very unique and rewarding experience to our co-ops.”

Brave welcomed Jacob Prodan, Crystal Roma and Mohamed Ramal, all of whom are third year Electrical Engineering co-op students from the University of Windsor. Additionally they brought on William Oudomsouk, a third year Mechanical Engineering student from UWindsor as an intern, and Lucas Chevalier a first year Electrical Engineering co-op from the University of Waterloo.

Brave’s latest group of students were the first to be offered an even more unique opportunity. Rather than a traditional co-op experience of working with senior engineers on projects to get a glimpse of the controls and automation industry, this batch of students were heavily involved in a variety of research and development projects currently underway at Brave.

The group was tasked with modelling various manufacturing simulations to demonstrate the range and capabilities of Brave’s new software that is still in development. The projects involved a lot of hands on learning of new hardware systems and programming languages which provided practical applications for what the students were learning in university.

“With Brave, I built an entire robot simulation in Unity which was very cool.” says William Oudomsouk. “My favourite courses were always math courses, but the issue I had with them was a lack of connection between what we were learning and how it would actually be useful. Turns out the kinematics of robots required all field of math to be applied, from linear algebra to differential equations. This was really cool because it gave me a chance to apply a subject I really enjoyed and showcase it in a way that others could appreciate by viewing the simulation.”

Jacob Prodan agrees that the co-op term was highly successful in showing the students how topics they are learning at university are going to be used after graduation. "Brave has definitely shown me how the things I have learned at university are applicable, but also what areas I still need to learn about as well."

All of the students were still able to gain experience in the controls and manufacturing industry as the virtual environment and simulations actually work together with PLC hardware systems and logic code.

"We were highly encouraged to explore and experiment with the various types of PLC software and hardware," explains Crystal Roma. Crystal and Mohamed Rammal worked together to simulate an end of line conveyor system that was being programmed by one of the Brave engineers.

"This is the coolest thing I have worked on, designing the simulation of the entire system and then connecting to the PLC and having it control the whole system as if it was connected to the real thing." says Rammal. "I found this an awesome project as everything is moving quickly towards simulation which is greatly beneficial in terms of reducing overhead cost and time."



At the end of their time with Brave, the students were given the opportunity to present the projects they had worked on to the entire office. They were able to demonstrate the power of the simulations and the potential impact the software could have on the future of the company and the controls industry.

Every single one of the students took their presentation as an opportunity to thank the staff and team at Brave.

“Brave has been an essential part of my preparation for my future career. The greatest skill I’ve taken away from this term was the ability to learn quickly and be adaptable,” says Oudomsouk. “In a career path where innovation and change are always around the corner, it’s important to be a lifelong learner.”

Thanks to Danielle Boutellier, Marketing Coordinator at Brave Control Solutions Inc. for contributing this article and sharing some of the great work our UWindsor Co-op Students are doing in our community, and the impact they have beyond the classroom.



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