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CNC Applied Research builds device helping student study

PRINCE GEORGE – The College of New Caledonia's (CNC) Applied Research and Innovation (AR&I) department has, for the first time, partnered with a student to design and build a tool to further her educational success.

Throughout CNC's Applied Business Technology (ABT) Administrative Assistant program, students are required to read and interpret numerous office related print outs, invoices and receipts.

For ABT student Veronika Veninsky, who lost her sight completely at the age of 17, technological advancements in the field of optical character recognition (OCR) have become her tool for success in the classroom. Using an iOS application, Veninsky is able to scan a document and it will be instantly dictated to her.

"The application will start reading as soon as it recognizes text through the camera," she said. "I can read a handout as instantaneously as anyone else in the class."

OCR technology, however, isn't without its limitations. Holding a phone over a document can cause a shake that makes it difficult for the application to interpret the information on the page.

Veninsky connected with CNC's Accessibility Services about this particular challenge. CNC Accessibility Service Advisor Azucena Rudland knew devices could be purchased to fix this issue but would take time to find, purchase and ship.

"I wanted to find a solution that would start helping Veronica as quickly as possible," she said. "I thought this would be a great project for Applied Research."

Matt McLean, senior research assistant for geographic information systems and unmanned aerial vehicles, was more than happy to be taking on a project directly supporting the success of a student.

"It's always great to be able to design," he said. "It's even better when that research is then applied and helping people right away."

The AR&I team began with the basics, pulling out their rules and measuring the dimensions of Veninsky's phone. Using the application, they determined the optimal height the phone should be from the paper. With those measurements, the research team designed parts to the exact dimensions and printed them off with a 3D printer.

"The plastic shrank a bit in the printing of the first prototype, which is normal," McLean said. "We adjusted for that and made a few modifications for stability and ease of use."

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In less than two weeks, AR&I delivered the finished device to Veninsky. The results were instantaneous, she said, and worked without cutting words off the sides of the document. She was also surprised by the unexpected addition of guiding pegs and adjustable heights.

“It was pretty amazing,” Veninsky said. “I was really touched.”

Inter-departmental partnerships are opportunities for the CNC community to make things happen for students, Rudland said.

“Everything we do at CNC is focused on student success,” she said. “Veronika has the tools she needs to succeed and that’s key.”

In the future, McLean hopes AR&I can partner with more students to further success at CNC.

Subsequently, he encourages any student interested in research to stop by AR&I and ask how they can get involved.

“I love having the opportunity to help people achieve what they need,” he said. “Research is a very collaborative. The more people interested in collaborating, the better.”

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For more information:
Dustin Ruth
Media Relations, Communications
College of New Caledonia
ruthd1@cnc.bc.ca | 778-349-0597