

Julia Chernushevich

Engineer & Instructor

Mechatronics engineer passionate about delivering high-quality, relevant teaching experiences to learners of all ages.

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📍 Waterloo, Canada

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WORK EXPERIENCE

Embedded Software Developer Alert Labs [↗](#)

02/2019 - Present

Kitchener, ON

- Responsible for the development and maintenance of six smart building products, as part of a team of three embedded software developers.
- Managing a fleet of over 10,000 sensors deployed across North America, including new firmware deployments, fleet health checks, and data analysis.
- Led the product development for an automatic water shut-off valve. This included working with a third-party hardware supplier, writing firmware, supporting platform development, coordinating beta testing, and rolling-out the product.
- Representing the Hardware team in company-wide usability discussions.

Content Developer

Udacity [↗](#)

05/2017 - 02/2019

Mountain View, CA

- Developed content (lectures, quizzes, labs, and projects) for the Robotics, Flying Car, and Cybersecurity Nanodegree Programs.
- Worked with leading subject-matter experts to create relevant and enjoyable programs that produce hireable graduates with skills needed in today's markets.
- Collaborated with graphic designers and videographers to convert storyboards into high-quality animations and videos.
- Worked closely with beta testers to iterate on pre-release content ahead of a course's launch.
- Analysed student feedback for existing courses to identify areas of difficulty. Created new content to improve the quality of the courses and increase student completion rates.

Mechatronics Engineer

University of Waterloo [↗](#)

08/2016 - 01/2018

Waterloo, ON

- Designed innovative projects, such as autonomous underwater robots, to introduce hands-on content to the Mechanical and Mechatronics Engineering curricula.
- Delivered projects and labs for 300 undergraduate students across two courses. This involved administering lectures, office-hours, and evaluations, as well as managing four teaching assistants.
- Co-managed a department makerspace, teaching students to use tools such as 3D printers, laser cutters, and CNC mills.
- Created courses for an online training program, allowing students to learn the basics of a technology. This cut down on the duration of in-person training required, increasing the lab's throughput.
- Managed seven co-op students tasked with the development of course material and design of new lab equipment.
- Delivered weekly workshops for the engineering outreach program, introducing students, age 7-9, to different methods of manufacturing.

SKILLS

Python

C/C++

C#

SQL

MongoDB

Git

GitLab

AWS

Product Design

UX

Teaching

Robotics

PERSONAL PROJECTS

BattleBots (2015 - Present)

- Designed and constructed several 250lb combat robots for the television show BattleBots.

Maker Faires (2019 - Present)

- Involved in the organization of Maker Faires and combat robotics events across North America.

Hydroponics

- Presently experimenting with indoor gardening, with the intent of automating the process to be as self-sufficient as possible.

VOLUNTEER EXPERIENCE

Secretary, Board of Directors

Kwartzlab [↗](#)

07/2020 - Present

Kitchener, ON

Community makerspace that serves 150 members.

- Overseeing the ongoing operations, safety, and financial health of the lab.
- Implementing virtual training for all of our equipment and processes, as to minimize in-person interactions during COVID-19.
- Assessing the feasibility of offering different membership tiers and delivering financial assistance in an equitable way.
- General secretary tasks - managing membership, internal communications, and outreach.

Head Robot Design Judge

FIRST

2011 - Present

Waterloo, ON

FIRST engages students in STEM activities through a yearly robotics and innovative design challenge.

- Judge team presentations and trial runs of their robot, providing constructive feedback.
- Organizing all Robot Design Judges to collectively rank teams, submit feedback, and continue judging through call-backs.

WORK EXPERIENCE

Program Co-Director SHAD Saskatchewan [↗](#)

08/2015 - 09/2016

Saskatoon, SK

- Responsible for the organization of a prestigious one month-long live-in program for gifted high school students from across Canada.
- Managed the hiring and training of 12 program staff (faculty, teachers, recreation directors, and program assistants).
- Planned curriculum to accommodate a wide range of interests and be appropriate for students ages 15 – 18.
- Managed communication with parents, guest speakers, university employees, and students.

Research and Development Engineer Prairie Machine & Parts [↗](#)

10/2014 - 06/2016

Saskatoon, SK

- Designed and programmed a data-logging tool that recorded vehicle operating parameters and provided remote diagnostics. This feature saved tens of thousands in operating costs by removing the need for on-site mine visits.
- Developed an interactive web application that presents logged operating parameters and live performance data to the end-user.
- Researched & tested battery technologies to produce the safest, most reliable, and long-lasting battery packs for our mine vehicles. Tests included cold-weather performance and lifecycle analysis.
- Designed and implemented a battery testing process that characterized battery cells prior to their assembly in a pack. This allowed production to identify faulty cells, reducing vehicle faults experienced by customers, saving the company tens of thousands of dollars.

ACHIEVEMENTS

Instructional Skills Workshop, University of Waterloo (2019)

Completed the 24-hour workshop, which taught me a variety of instructional strategies and techniques, gave me the opportunity to practice them, and then had me reflect on my teaching. Topics covered included establishing learning objectives, participatory learning, and creating positive learning environments.

CPR HCP Certified

Boating & Hunting Licenses

VOLUNTEER EXPERIENCE

Guider Girl Guides of Canada

01/2015 - 03/2018

Saskatoon & Waterloo

Girl Guides provides girls age 5-17 with the opportunity to try new experiences, challenge themselves and build their confidence.

- Hosted Girl Guide meetings where girls worked towards their badges. Activities ranged from simulated search and rescue missions to chemistry experiments.
- Organized camping trips, which included managing safety, food, and education for the girls.
- Taught Robotics to other units in the region, as a Resource Guider.

EDUCATION

Bachelor of Applied Science, Honours Systems Design Engineering, Co-op Program University of Waterloo

2008 - 2013

Waterloo, Canada

LANGUAGES

English

Native or Bilingual Proficiency

Russian

Full Professional Proficiency

INTERESTS

Rock Climbing

Gardening

Equality

Ultimate Frisbee

Reading

Fitness

Climate Change

Skiing

Board Games