

ROSS EVANS

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Education

University of Waterloo

Master of Mathematics in Computer Science

Waterloo, ON

Sep. 2022 – May 2024

- Studying formal verification of cryptographic proofs under Douglas Stebila

University of Waterloo

Bachelor of Computer Science

Waterloo, ON

Sep. 2017 – May 2022

- Major Average: 92%, Cumulative Average: 90%
- Graduated on the Dean's Honours List

Awards

NSERC Undergraduate Student Research Award (\$6000)

May 2021

Awarded by the Natural Sciences and Engineering Research Council of Canada for exemplary academic record and research aptitude

President's Research Award (\$3000)

May 2021

For excellent academic standing and commitment to research

President's Scholarship of Distinction (\$2000)

September 2017

For entering undergraduate studies with 95%+ academic average

Governor General's Academic Medal

May 2017

For attaining the highest cumulative average at Colonel Gray Senior High School

Work and Research Experience

Instructor | CS246 (2 sections)

Sep 2022 – Dec 2022

University of Waterloo

Waterloo, ON

- Delivered lectures on bash, C++, object oriented programming, and design patterns
- Designed and implemented assignment questions to test student knowledge of core programming concepts.
- Aided in writing the midterm and final exam.
- Held frequent office hours to assist students with material.

Full Stack Software Developer

May 2022 – Aug 2022

Silverorange

Remote

- Developed CI pipelines to execute database migrations using Prisma
- Integrated Sentry error logging to a NextJS app
- Developed a suite of admin tools using AWS S3 and SNS
- Updated legacy code from PHP 7 to PHP 8 while ensuring product uptime

Part Time Instructional Support Assistant | CS246

Jan 2022 – Apr 2022

University of Waterloo

Waterloo, ON

- Delivered weekly tutorials on C++, object oriented programming, and design patterns
- Took initiative in hosting a review session before students took the course midterm

- Aided in marking the midterm and final exam.
- Student feedback available at <https://rossefans.ca/student-feedback/winter-2022-cs246/>

Instructional Support Assistant | CS246, CS246E

Sep 2021 – Dec 2021

University of Waterloo

Waterloo, ON

- Received the highest rank of “Outstanding” on 50+ student feedback forms. Feedback available at <https://rossefans.ca/student-feedback/>
- Took on extra responsibility by assisting with two courses while ensuring that both ran smoothly and students received the assistance necessary
- Delivered an in-person tutorial for the enriched class on C++20 concepts and constraints; related the material back to course content on template meta-programming
- Coordinated the marking for hundreds of final projects
- Assisted instructors in the creation of a final project specification
- Nominated for Co-Op student of the year award

Undergraduate Research Assistant

May 2021 – Aug 2021

University of Waterloo

Remote

- Researched space-efficient algorithms for recognizing well-parenthesized expressions given multiple passes in the streaming model
- Self-studied information theory and the literature on streaming algorithms
- Presented on the topic at the UW Combinatorics and Optimization URA Seminar Series

Part Time Instructional Support Assistant | CS146

Jan 2021 – Apr 2021

University of Waterloo

Remote

- Answered student questions about C, Racket, Haskell, and MMIX via Piazza and office hours
- Aided in course administration via the maintenance and deployment of automated marking scripts for student assignments
- Compiled grade spreadsheets from a variety of sources

Instructional Support Assistant | CS246

Sep 2020 – Dec 2020

University of Waterloo

Remote

- Exclusively received the highest rank of “Outstanding” on 20+ student feedback forms; praised for my C++ knowledge, approachability, and helpfulness. Feedback available at <https://rossefans.ca/student-feedback/fall-2020-cs246/>
- Created bash scripts to automatically test student submissions within a sandbox environment
- Developed a script in Python to convert disparate lecture web-pages into a single course notes PDF with appropriate styling and internal hyperlinks
- Developed teaching skills via answering student questions through office hours and creating tutorial videos

Front-End Engineering

Jan 2020 – Apr 2020

Cognite

Oslo, Norway

- Created an in-house Gantt Chart component built in React with D3, saving licensing costs from other pre-built solutions
- Extracted features from a monolithic application into many separate micro-applications, allowing for containerization and code reusability
- Collaborated on a custom component library to remove dependence on an external design system

Software Developer

May 2019 – Aug 2019

D2L

Kitchener, ON

- Utilized Terraform, AWS SNS, AWS SQS, and AWS Lambda to decouple interdependent applications
- Recreated a .NET Razor UI in React, allowing for cheaper hosting via AWS S3 instead of requiring a container stored in AWS ECR and run in AWS ECS
- Ported a .NET Framework Web API to .NET Core, allowing for the decommissioning of expensive Windows ECS clusters.

- Advised coworkers on the potential benefits, drawbacks, and cost of using AWS DynamoDB versus AWS RDS.

Software Engineering Intern

May 2018 – Aug 2018

Sony Interactive Entertainment

Waterloo, ON

- Developed software for the PlayStation Store: an app for the PlayStation 4 with 80 million monthly users
- Engineered the ability to view the store in different locales to support GDPR laws within the EU
- Redesigned the PlayStation Plus upsell framework to support dynamic backend content management, allowing for easy modification of advertising and promotions
- Fixed multiple long lasting defects in proprietary legacy JavaScript frameworks

Full Stack Web Developer (Part-Time)

Feb 2017 – Aug 2020

Silverorange

Charlottetown, PEI

- Engineered API routes using Express, NodeJS, and PostgreSQL to connect user information with ISPs at connecting-families.ca
- Integrated text and email notifications using Twilio and Amazon SES
- Implemented Google Analytics support to track and improve user retention rate
- Developed TypeScript React components for a number of different projects
- Configured Jenkins pipelines and designed functional tests to improve quality assurance

Academic Projects

Survey on Straight Line Planar Graph Drawing Algorithms | CS 466

Aug 2020

- Independently conducted a literature review on straight line planar graph drawing algorithms, familiarizing myself with the relevant background and proof techniques
- Demonstrated this understanding by rewriting the proofs at an undergraduate level of detail with supporting examples
- Received the feedback: “Your report is excellent. The content is interesting. The flow is good in that you wasted no time and yet it is nicely connected. It is clear that you have put much thought into the report.”

Tutte Embedding Animation Website | CO 342

Nov 2019

- Took initiative to implement a graph drawing algorithm demonstrated in class; received extra credit for the effort
- Created the ability to record and playback animations made in the website with a multitude of visual display settings
- Used by Dr. Peter Nelson to present Tutte’s Spring Theorem in future courses

Extracurriculars

Organizational Team Lead, Volunteer

Sep 2019 – July 2022

Frontier College

Waterloo, ON

- Planned engaging activities teaching students in grades 1-5 math skills
- Developed a bespoke application to render coding animations which integrated with Kahoot questions. Further details available [on my website](#)
- Organized Kahoots for students to play on subjects like coding, financial literacy, probability, and sequences

Founder

July 2018 – Oct 2020

MyOTStride

- Developed an app and website to improve communication between occupational therapists and clients
- The app and website were used in a clinical study at Queens University
- Received the Hacking Health Ottawa 2018 Shopify Mentorship Award

Technical Skills

Languages: C++, JavaScript, C, Python, HTML/CSS, Bash, SQL, C#, PHP, TypeScript

Frameworks: React, Redux, React Native, .NET, Express, Flask

Developer Tools: NodeJS, Sequelize, Git, AWS, Docker, Terraform, Jest, Jenkins, NUnit

Work Term Feedback

- UW Instructional Support Assistant (Fall 2021) - “Ross performed well above expectations. In a position where co-op students are hired to help assist on a single course, Ross willingly signed up to help out with two different courses. He did not allow the multiple courses to split his focus and dedication to make sure each was running smoothly and students were receiving the assistance they needed. He often put in extra hours to help students in both courses beyond the scope of the co-op position and made work easier for the course instructor and fellow course staff members. His performance was so exceptional that I am nominating him for the Co-op Student of the Year Award.”
- UW Instructional Support Assistant (Fall 2020) - “Ross performed well above expectations. His dealing with students questions and concerns was exemplary, so much so that student feedback was the highest I have ever seen. He made the job of everyone else in the course significantly easier. We’d love to have him back to work with us.”
- Cognite - “Excellent work over the work term with no issues at all, especially considering the circumstances (work term took place during the beginning of the COVID pandemic). Work completed provided great business value, and work was done at a decent speed and at good quality, thinking deeply into the best way to ensure quality code.”
- D2L - “Ross exceeded our expectation. We were able to task him with some of our larger, more complex projects, and he was able to complete them without issue. Ross would be an asset to any company, and I would not hesitate to recommend him for re-hire”
- Sony - “Ross is a very prolific developer that rarely needed heavy correction in his code. He has a jovial and fun-loving demeanor that makes him a pleasure to work with. He will be greatly missed at Sony.”