

Keefer C. Rourke

Back-end Software Developer

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🌐 krourke.org

in keeferourke

📷 keeferourke

📍 Toronto, ON

📁 Experience

Software Developer May 2021 – Present 📅

Square Inc. — Cash App Toronto, ON 📍

Software Developer Co-op May 2020 – Aug. 2020 📅

Mozilla Inc. — Firefox Toronto, ON 📍

- Rewrote Firefox File I/O subsystem in C++ in an effort to reduce cache contention and memory usage, while improving start-up performance
- Wrote comprehensive migration guide for the new File API
- Fixed bugs related to site-isolation in effort to mitigate Spectre-like vulnerabilities in the browser runtime

Software Developer Co-op Jan. 2020 – May 2020 📅

Square Inc. — Cash App Toronto, ON 📍

- Designed and built a high-throughput internal load testing service
- Prevented critical production errors through scheduled live load tests
- Collaborated with product teams to integrate with their services

Software Developer Co-op May 2019 – Aug. 2019 📅

Square Inc. — Cash App Kitchener, ON 📍

- Led design and development of a software security service to defend against dependency supply chain attacks on the JVM
- Was responsible for the entire software development life-cycle
- Shipped new features to the open-source `misk` microservice framework for Kotlin, including overhauled service coordination logic

Lead Developer & Research Assistant Jan. 2019 – Dec. 2019 📅

U of Guelph School of Computer Science Guelph, ON 📍

- Led development, integration, and testing of the web API for the eNuk environmental and health monitoring application
- Trained new research assistants to accelerate their understanding and contribution towards project goals
- Collaborated and liaised with external client development team

Software Developer Co-op Apr. 2018 – Dec. 2018 📅

Left Inc. — RightMesh Metro Vancouver, BC 📍

- Led refactoring of monolithic code base into platform-independent modules, improving developer velocity and code quality
- Identified problems and proposed solutions for software security and reliability, particularly focused on trust models in decentralized systems
- Assisted with successful application for **\$2.13M** Mitacs Research Grant
- Awarded 2018 Co-op Student of the Year at the University of Guelph

Skills

Programming

Object-oriented, async/concurrent, functional & systems programming with:

Kotlin Golang Python C C++
JavaScript (ES6+) Java 8+

Back-end/DevOps

Development, integration, deployment, and use of:

REST APIs Protobuf gRPC
Microservices Docker Shell Git
Mercurial Gradle Make Meson
Ninja GitLab CI Travis CI GitHub
Phabricator NoSQL RDBMSs (SQL)
Ansible Cron Nginx Systemd

Operating Systems

System administration, automation and deployment with:

GNU/Linux POSIX Unix Fedora
Debian Ubuntu OpenBSD macOS

Methodologies

Agile Scrum Modular design
Test-driven development

🏛️ Education

Honours Bachelor of Computing (Co-op) May 2021 📅

University of Guelph

- Major in Computer Science
- Minor in Mathematics
- Cumulative weighted GPA: 4.0
- College of Engineering and Physical Sciences valedictorian

Lead Web Developer & Research Assistant


Jan. 2018 – Apr. 2018 

University of Guelph School of Computer Science

Guelph, ON 

- Designed and developed secure, modular web application with NodeJS using the model-view-controller pattern
- Investigated capabilities and interoperability of mobile mesh networking with the web application server
- Led and participated in regular design meetings, ensuring organization and clear communication during development

Founder & Lead Developer/Designer

Nov. 2015 – Jan. 2019 

Tokumei Co. – Anonymous Microblogging

tokumei.co/ 

- Designed and implemented scalable ranking algorithms for trending posts/tags and a topics-based subscription model
- Attracted international interest for use and development of the platform from software developers in 4 countries
- Wrote comprehensive documentation aimed at both users and developers

Presentations

Aug. 2018	2018 Indigenous Mapping Workshop (Invited)	Montréal, QC
	Using Mesh Technology to Support Climate Change Monitoring. <i>Durish, N., Rourke, K. & Gillis, D.</i>	
Jan. 2018	StarCon – Software Engineering Conference	Waterloo, ON
	Gloom, Doom, and the Internet, a talk about internet privacy, security, and data ownership. <i>Rourke, K.</i> https://krouke.org/projects/pres/starcon18	
May 2017	Ontario Centres for Excellence: Discovery Business Conference	Toronto, ON
	Exhibited Tokumei Co. to investors. Attendance was funded via youth entrepreneurial grant.	

Awards & Scholarships

Awards & Honours

2021	E.B. MacNaughton Covocation Prize (\$1000 CAD)	University of Guelph
	Awarded for demonstrating most excellent overall academic achievements and contributions to campus/community.	
Jan. 2019	Co-op Student of the Year Award (B. Computing) (\$1000 CAD)	University of Guelph & Left Inc.
	Awarded for outstanding workplace performance, academic achievement, and involvement in the community.	
Jul. 2018	Major League Hacking Ethical Tech Award (\$10 000 USD)	Omidyar Network
	Awarded for authoring a series of essays on ethics & technology. Funds used to attend the <i>35th annual Chaos Computing Congress</i> in Leipzig, Germany.	
2016–2019	Dean's List: College of Physical and Engineering Sciences	University of Guelph
	Achieved greater than 80% semesterly averages in all full-time academic semesters.	

Scholarships & Grants

Oct. 2018	Michele and Maria Vannelli Scholarship (\$1000 CAD)	University of Guelph
	Awarded for academic excellence and community leadership in the College of Physical and Engineering Sciences.	
Nov. 2017	Jay Majithia Scholarship (\$1000 CAD)	University of Guelph
	Awarded for contributions to departmental research in the School of Computer Science.	
May 2017	OCE Youth Entrepreneurial Grant (approx. \$1000 CAD)	Ontario Centres for Excellence
	Awarded funding to exhibit at the 2017 OCE Discovery business and technology conference in Toronto, ON.	
Sept. 2016	University of Guelph Entrance Scholarship (\$3000 CAD)	University of Guelph
	Awarded upon acceptance to the University of Guelph for attaining greater than a 90% admission average.	