

# David Gurevich

dgurevich@uwaterloo.ca  
(416) 414 0515  
gurevich.ca

## EDUCATION

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### University of Waterloo

Bachelor of Mathematics in Computer Science and Computational Mathematics

Waterloo, ON

Expected Graduation: April 2025

## EXPERIENCE

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### Radar

Software Engineering Intern

New York City, NY

September 2024 - December 2024

- Improved speed and accuracy of company proprietary geocoder using **Rust**. Added features to support international address geocoding, leading directly to several new international customers.
- Developed algorithmic optimizations that improved search performance by up to 99% in some cases, reducing latency from hundreds of milliseconds to sub-millisecond ranges
- Developed an **Apache Spark** pipeline to ingest and process every street in the world to later be used in the geocoder.
- Designed a new indoor uplink TDoA-based real-time location system using ultra-wideband (UWB) technology. Performed **STM32** board bring-up. Implemented robust localization, optimization, and estimation algorithms in **Python**.

### University of Waterloo

Undergraduate Researcher

Waterloo, ON

May 2024 - August 2024

- Conducted research on non-parametric change detection methods, with the intention of identifying shifts in unknown probability distributions on an incoming stream of data.
- Applied advanced geometric methods to learn representations of high-dimensional data that are more conducive to change detection. Developed solution that was more robust than current state-of-the-art methods.
- Investigated the use of hardware Spiking Neural Networks for solving partial differential equations, particularly as hardware accelerators for such tasks.

### Enlightened – Siemens AG

IoT Research Intern

Waterloo, ON

January 2024 - April 2024

- Researched and developed an **LSTM**-based approach to perform localization of BLE assets using **TensorFlow**.
- Developed and integrated a robust Kalman filter using **Python**, **Redis**, and **MongoDB**, accessible via **FastAPI**.
- Performed mathematical analysis on optimal estimators (CRLB) and filters (Kalman) to establish benchmarks.

### MathWorks, Inc

Software Engineer in Test Intern

Glasgow, Scotland

May 2023 - August 2023

- Enhanced the **C++** based high-speed data acquisition interface, ensuring accurate performance benchmarking and optimal system evaluation.
- Consolidated several RF processing chains to reduce the number of **FPGA** bitstreams required for building and testing MATLAB Wireless Testbench by 50%, resulting in a 4+ hour reduction in daily build time.

### Applied Mind, Inc

Software Development Intern

Ottawa, ON

January 2022 - April 2022

- Performed novel research to design and implement sensor fusion algorithms (using **Kalman filter**, TDOA) in **Python** to eliminate error in RF emitter location estimates from 2 meters to 0.5 meters.
- Designed and implemented high-speed data streaming application for **embedded Linux** system in **Rust** within soft real-time performance constraints.

### Applied Mind, Inc

Embedded Software Development Intern

Ottawa, ON

May 2021 - August 2021

- Developed multithreaded radio signal acquisition software in **Rust** to receive and process LTE signals at over 60 MS/s.
- Made use of **DMA** and **CPU caching** in order to transfer received data from FPGA to processor at over 1 GB/s.

## TECHNICAL SKILLS

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- Languages:** Python, C++, C, Rust, MATLAB, Scala, Scheme, SQL