

Koral Kulacoglu

Toronto, Canada | Canadian Citizen

✉ kulacoglukoral@gmail.com [in koralkulacoglu](https://www.linkedin.com/in/koralkulacoglu) [🐙 koralkulacoglu](https://github.com/koralkulacoglu) [🌐 koralkulacoglu.com](https://www.koralkulacoglu.com)

EDUCATION

University of Waterloo | Bachelor of Software Engineering (AI Specialization) 3.7/4.0 GPA | Sep 2023 – Apr 2028

- **Awards:** [Hack the North Winner](#) 🏆, USACO Platinum, [1st place at Canada-Wide Science Fair + 2nd at EUCYS](#) 🏆
- **Math:** Combinatorics & Optimization, Numerical Computation, Signals & Systems, Statistics, Linear Algebra, Calculus
- **CS:** Advanced Algorithms, Operating Systems, Database Systems, Compilers, Software Design & Testing, User Interfaces

EMPLOYMENT

Coinbase | Software Engineer Intern San Francisco, CA | Incoming 2026

- Incoming on [Institutional Team](#) 🏢.

BitGo | Software Engineer Intern Palo Alto, CA | Sep 2025 – Dec 2025

- Built a **Rust-based linter** using **Tree-sitter** and **GraphQL** to **lazy-parse** package manifests and prevent vulnerable dependency updates, protecting **320+** BitGo repositories from supply chain attacks.
- Parallelized BitGo's static analysis engine via **shared-state concurrency** (Arc/Mutex), cutting runtime by **95%** (5m → 15s), and refined integration tests by implementing API mocking via **Mockito**.

AtoB | Software Engineer Intern San Francisco, CA | Jan 2025 – Apr 2025

- Created lead data pipelines, including a **Ruby on Rails UTM tracking system** ingesting **500K+** events monthly, and a **Python Selenium UCC-1 web scraper**, collecting **\$150K+** worth of data via **Snowflake**.
- Developed a **greedy semantic matching algorithm** using a priority queue and **Sentence Transformers** to automate PDF-to-SQL mapping in the [Fuel Statement Analyzer](#) 🏢, saving **\$2** of manual labor per analysis.

D2L | Software Engineer Intern Toronto, ON | May 2024 – Aug 2024

- Built a **multi-agent framework** to simulate student workflows (e.g., assignments, discussion posts) for use in automated course QA, deployed on **AWS Step Functions, Lambda, DynamoDB, and S3**.
- Developed a tool around Brightspace to automatically build **FAISS knowledge graphs** and **vector databases**, enabling **semantic search** and smart navigation within courses; recently adopted as [BrightspaceBot](#) 🏢.

PROJECTS

🔗 **Smart Order Router** Nov 2025 – Ongoing

- Built an **Aggregated Order Book** in **Go**, processing **3.1 million updates/sec** with **330ns critical path latency**.
- Optimized memory access patterns by profiling **Lock-Free Ring Buffers** vs. **Sharded Architectures**, identifying that **CPU cache locality** in standard spin-locks improved throughput by **15%** (to **3.1M ops/sec**) by eliminating hashing overheads.
- Developed a **Cross-Exchange Bitcoin Arbitrage Engine**, achieving a simulated **2.9% daily ROI** under ideal conditions.

🔗 **3D Octree Compression** Jul 2025 – Aug 2025

- Developed a **3D object compression algorithm** using **Octrees**, achieving up to **99% memory reduction**.
- Built a **real-time OpenGL visualizer** using MVC design pattern and C++ features (templates, smart pointers).

🔗 **FourSight (EUCYS Project Representing Team Canada)** Mar 2022 – Jan 2023

- Built a **95% accurate neural network** using **TensorFlow** to classify 12 types of cancer from microarray samples.
- Wrote a **DGE analysis library** in **Python** using **SciPy** and **Matplotlib** to **rediscover RNA-based cancer biomarkers**.

SKILLS

- **Languages:** C/C++, Python, Rust, Go, Ruby, Java, JavaScript, TypeScript, SQL, Shell Script, Assembly, LaTeX
- **Tools:** Git, Docker, Linux, AWS, Kubernetes, Keras/TensorFlow, PyTorch, NumPy, GraphQL, Rails, React, NodeJS, Django