

Maxwell Cruickshanks

Waterloo, ON, Canada

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Skills

C++, Go, Java, Python, SQL, JavaScript, AWS EC2/S3, \LaTeX , Git, Unix, Scrum, Object-Oriented Design, Decision Making, Technology, Effective Communication, Creativity, TypeScript, OR-Tools

Education

University of Waterloo

Sep 2022 – Present

Bachelor of Computer Science, Honours – AI Specialization

Waterloo, ON

- Cumulative GPA: 95.41% / 4.0 GPA

Work Experience

Lisplogics

May 2024 – Aug 2024

Data Scientist Intern – Algorithms and Machine Learning

Montreal, QC

- Optimized car wash routing model with 20% more cars washed using simulated annealing
- Decreased latency by >100x for Go bike-rebalancing simulation
- Improved accuracy 50% with LightGBM by feature-engineering for bike-rebalancing model
- Deployed Prometheus endpoint and Grafana dashboard for forecasting 9 accuracy metrics
- Technologies: Go, Python, Grafana, Prometheus, AWS, OR-Tools, TypeScript

Untether AI

May 2023 – Aug 2023

Compute Kernel Software Engineering Intern

Toronto, ON

- Shrunk database stored locally by 97.5% and improved organization with problem solving
- Created Proof-of-Concept for saturating ports with RISC-V chip for 8x throughput
- Integrated PostgreSQL database and REST API in TeamCity CI/CD for 95% faster stats retrieval
- Increased throughput >400% for compute kernels for ML layers (like upsample, convolution)
- Technologies: Python, C++, SQL, Git, Unix, Scrum

Centre for Education in Mathematics and Computer Science

Dec 2022 – Present

Canadian Computing Competition Committee Member

- Wrote problems for Canadian IOI selection contests (CCC/CCO) and proofread 10+ problems
- Generated test data and >10 solutions for problems using C++ Codeforces-style generators
- Technologies: Python, C++, Java, \LaTeX

DMOJ: Modern Online Judge

May 2021 – Present

Site Moderator

- Added 1000+ problems, ensured consistency across the problem set
- Organized and set 10+ contests, each with 100+ contestants
- Continually updated test data for 200+ problems to prevent unintended solutions from passing
- Technologies: Python, C++, \LaTeX

Contests and Awards

LeetCode – maxcruickshanks

- Top 200 out of 420 000 users (top 0.05%), peak rating of 2800+

Canadian Computing Olympiad 2021 – Bronze Medalist

- Placed in the top 40 out of 2920 contestants in the Canadian Computing Competition to qualify

Codeforces – maxcruickshanks

- Peak rating of 2000+, top 30 in Canada

Personal Projects

ASCII Game Engine (C++)

- Designed ASCII art game engine in C++ using ncurses library and built games Space Invaders, Atari Breakout, DOOM-style 3D game
- Followed SOLID design principles and MVC for collision mechanics and UI, writing 2000+ lines

Course Scheduler (C++)

 [maxcruickshanks/Course-Scheduler](https://github.com/maxcruickshanks/Course-Scheduler)

- Course scheduler using C++ for minimizing workload in any study term with heuristics

Compiler for LACS (Scala)

- Wrote Scala compiler from LACS to MIPS Assembly Language with garbage collection
- Supports nested procedures, scopes, type-checking, heap and stack, tail-call optimization