Maxwell Cruickshanks

Waterloo, ON, Canada

github.com/maxcruickshanks · linkedin.com/in/maxcruickshanks · maxcruickshanks.site
me@maxcruickshanks.site · +1 (289) 380-7027

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: 95.24% / 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+
- **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

- **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**