# Maxwell Cruickshanks

*Waterloo, ON, Canada*

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

## Skills

C++, Go, Java, Python, SQL, JavaScript, AWS EC2/S3, LaTeX, Git, Unix, Scrum, Object-Oriented

## Education

**University of Waterloo**                                                                    Sep 2022 – Present
Bachelor of Computer Science, Honours                                                              Waterloo, ON
- **Cumulative GPA: 95.60% / 4.0 GPA**

## Work Experience

**Jane Street**                                                                              May 2026 – Aug 2026
Incoming Software Engineering Intern                                                              New York, NY

**Akuna Capital, LLC**                                                                        Jun 2025 - Aug 2025
Software Engineer Intern - C++                                                                     Chicago, IL
- Developed new **PCAP** replay system for backtesting strategies, supporting **10M+** packets/second
- Enabled synchronized replay across **multi-GB PCAPs** spanning **250+ files and directories**
- Implemented **BPF packet filtering** to isolate market data streams, reducing noise by **90%+**
- Technologies: **C++20, libpcap, Apache Arrow, Boost, CMake, Conan, Databricks, Python**

**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**
- **Improved accuracy 50%** with **LightGBM** by feature-engineering for **bike-rebalancing model**
- Technologies: **Go, Python, Grafana, Prometheus, AWS, OR-Tools, TypeScript**

**Untether AI**                                                                              May 2023 – Aug 2023
Compute Kernel Software Engineering Intern                                                         Toronto, ON
- Technologies: **Python, C++, SQL, Git, Unix, Scrum, PostgreSQL**

**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

**IMC Prosperity 3 - Prize Winner**                                                                 April 2025
- Placed **16th out of 12 000+ teams** (top 0.13%) in **IMC Prosperity 3** trading competition

**Canadian Computing Olympiad - Bronze Medalist**                                                     May 2021
- Placed in the **top 40 out of 2920 contestants** in the Canadian Computing Competition to qualify

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

**Codeforces - maxcruickshanks**
- **Peak rating of 2000+**, top 30 in Canada

## Personal Projects

**Compiler for Joos 1W (OCaml)**
- Built **OCaml compiler** from **Joos 1W** (subset of Java) targeting **x86 assembly**, with **custom IRs**, **register allocation, type-checking, casting, object-oriented features** in **9 000+ lines**
- Implemented **SSA, constant propagation, local value numbering, dead code elimination**, and **control-flow graph** optimizations; validated with **1,190+ tests** and full coverage
- Designed **dynamic dispatch** via **class/interface dispatch vectors** and **subtype tables**

**ASCII Game Engine (C++)**
- Wrote **ASCII game engine with C++** in **ncurses** library, built DOOM-style 3D game, Atari Breakout
- Followed **SOLID design principles** and **MVC** for collision mechanics and UI, writing **2 000+ lines**

**Course Scheduler (C++)**                                                             maxcruickshanks/Course-Scheduler
- **Course scheduler using C++** for minimizing workload in any study term with heuristics