

Derek Cresswell

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WORK EXPERIENCE

AMD, Software Development Engineer 2

January 2025 - Present

- Pioneered a full migration from legacy Makefile-based build systems to **CMake**, reducing build times by **10x** and dramatically shortening CI pipelines, enabling faster code-test iteration for developers.
- Led refactoring of a core kernel-mode driver library from C to modern C++, streamlining features and integrating an on-hardware test suite for **GPU driver validation**.
- Accelerated driver compilation by **2.5x** using custom tools that leveraged **graph-based algorithms** to identify and eliminate inefficiencies in header inclusions.

University of Toronto, Computer Science Research Assistant

April 2023 - April 2024

- Built compiler-level machine learning optimizations in **LLVM** and **PyTorch** for GPU matrix multiplications providing a **2x speedup** on benchmarks (under Prof. Dehnavi and the UTEA award).
- Created and presented **50-minute** lectures on educational **paradigms** (under Prof. Gries and Prof. Calver).
- Programmed a threading sub-system in a **Rust Operating System** for the x86 platform (under Prof. Sun).

University of Toronto, Computer Science Teacher's Assistant

September 2022 - April 2024

- Mentored **16** student teams on large-scale **Java** projects using **Clean Architecture** and **Object Oriented** programming, guiding them through system design, implementation, and testing.
- Hosted lab sessions and revamped **Git** and **software architecture** materials, clarifying and aligning these courses with real-world software engineering practices.

Acro Commerce, Backend Software Engineer

October 2019 - May 2022

- Designed and implemented **GitLab CI/CD** pipelines, unifying deployments across **100+** company websites.
- Maintained and improved **4** internal **C++** systems that powered daily workflows for project and account managers, including tools for tracking issues, time logging, and client accounts.
- Developed **AWS-based** data tooling (**Lambda**, **Redshift**) to consolidate **20+** years of company data for centralized business intelligence and analytics research.

Hiilite Creative, Web Developer

August 2019 - October 2019

- Delivered production-ready **PHP** backends and **React.js** frontends aligned with detailed design specifications ensuring consistency across engineering and design teams.

EDUCATION

University of Toronto, Honours Bachelor of Science

September 2020 - April 2024

- **Computer Science Specialist** with a minor in **Mathematics** and a Dean's List Scholar, **CGPA: 3.92**
- Relevant coursework: Operating Systems, **Compilers**, **Embedded Systems**, Formal Methods, Networking, Parallel Programming, **Graphics**, **Machine Learning Theory**.
- Awards: BC Achievement Scholarship, KSS PAC Award, Capital News Bursary, Woodsworth College Scholarship, U of T Excellence Award.

VOLUNTEERING

University of Toronto, Alumni-Student Mentor

January 2025 - Present

- Mentored UofT CS students through 1-on-1 career coaching, technical Q&A and led office tours resulting in a student new-hire and several qualified applicants receiving interviews.

OPEN SOURCE CONTRIBUTIONS

Drupal: Credited on [50+ fixes](#) to 9 different projects within the core codebase and module ecosystem. Drupal is a widely used, mature, **PHP content management system** for building complex e-commerce websites.

GameDesign11: Designed a [high school course](#) on 2D game creation in the **Unity Engine**, including lessons on physics simulations, programming basics, and common game design patterns. The course remains in use.

SKILLS

Languages: C, C++, CMake, Rust, Python, and CUDA.

Skills: Kernel Debugging, Driver Development, and Data Oriented Design.

Tools: Git, WinDbg, LLVM, Clang, OpenGL, CoPilot, Pytorch, TensorFlow, and Jenkins.

Personality: Communicative, team-oriented, dependable, and forward-thinking.