

Samuel Reeder

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EDUCATION

University of Toronto, St George Campus, Department of Computer Science

Toronto, ON

HBSc, Computer Science Specialist (AI); Statistics & Mathematics minors

Expected Apr. 2027

- Activities: CSC301 & CSC207 Software Project Manager, LearnAI Lecturer, New College Sustainability Rep

PROFESSIONAL EXPERIENCE

AMD

Calgary, AB

Associate Engineer

May 2026 – Present

- Lead development of hipDNN's Python benchmarking infrastructure and built time-series performance tracking with parallelized sweeps over 1,197 kernel-shape cases across 3 GPU architectures, flagging regressions nightly.
- Authored an RFC and implemented runtime pass-by-value tensor support in hipDNN, enabling hipDNN engines to use AMD's AITER assembly kernels for FlashAttention prefill and paged-attention decode (up to 1.8x speedup).
- Implemented hipDNN's kernel descriptor loader, replacing hard-coded C++ engine tables with JSON descriptors discovered and validated from disk at runtime, so new engines ship without C++ changes.
- Built one-command setup tooling for agentic coding harnesses with AMD authentication and MCP server integrations, which became the standard onboarding tool for 9+ teams across the organization.
- Gave two internal talks to ~100 AGS Libraries engineers on agentic harness fundamentals (permissions, skills, subagents, worktrees) and orchestrating parallel multi-agent teams across the development stack.

AMD

Calgary, AB

AGS Libraries Software Development Intern

May 2025 – May 2026

- Reduced exhaustive performance sweep duration from 5 days to 3 hours (~40x) by building a Python/Kubernetes benchmarking framework that distributed model workloads across 256 GPUs on Azure Kubernetes Service (AKS).
- Landed 240+ PRs and reviewed 350+ more across ROCm's public C++ GPU-library repositories.
- Expanded hipDNN's computational graph frontend with 6 operator nodes (MoE, Conv dgrad/wgrad, RMSNorm, block-scale Quantize/Dequantize), backend lowering for MatMul and BatchNorm, and attribute/edge validation.
- Integrated Convolution and BatchNorm engines with naive reference implementations; validated against PyTorch.
- Designed a unified callback-based logging interface adopted across hipDNN plugins and subcomponents.
- Extended MIOpen's Convolution Fusion C API with additional tensor layouts, improved solver-selection heuristics, and driver tooling integration, delivering a 6.5% speedup across a customer's total convolution workloads.

DataAnnotation Tech

Remote

Data Analyst & Programmer

May 2024 – Oct. 2024

- Authored and debugged algorithms in C++, Rust, and Python to generate high-quality RLHF code corpora, emphasizing performance, edge-case handling, and memory safety.
- Analyzed prompt-response datasets using Pandas, Matplotlib, and multinomial logistic regression to identify distribution shifts, reduce label noise, and predict acceptance-criteria adherence.

GoChain

Remote

Software Engineer Intern

May 2022 – Oct. 2022

- Redesigned the GoTrace supply-chain application frontend, streamlining workflows and reducing UI complexity.
- Debugged critical issues in the Go-based GoChain blockchain node daemon, improving platform stability.
- Developed gochain.io to support client outreach and technical recruiting.

NOTABLE PROJECTS

AsciiNet | Python, PyTorch, CUDA

- Distilled a 28M-parameter image-to-ASCII model, reaching 24 ms/image (RTX 5080, 80 columns): 4.5x faster than its teacher, within 2.7 percentage points on a 480-question VLM recognition benchmark.

Caspr | TypeScript, Next.js, Jest, Firebase

- Built Caspr, a causal-graph visualization platform for U of T AI researchers, leading a 7-developer team.

Tetris Assembly | MIPS Assembly

- Implemented a complete Tetris game with native 2D graphics in 1,200+ lines of 32-bit MIPS Assembly.

Generative Piano AI | Python, PyTorch, MIDI, Docker

- Designed and trained a piano transformer on 100+ classical MIDI pieces, then fine-tuned it with RLHF.

SKILLS & AWARDS

Languages: C++, C, Python, Rust, TypeScript, Go, MIPS Assembly

Technologies: ROCm, CUDA, PyTorch, Linux, Kubernetes, Docker, GitHub Actions, Slurm, CMake, GTest, PostgreSQL, Git

Awards: Four AMD Director's Spotlight Awards, U of T Dean's List Scholar