Adam Morgan

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Education

Toronto Metropolitan University — Toronto, ON
Bachelor of Engineering in Electrical Engineering — *Sep. 2023 – Jun 2030*

Relevant Coursework: Digital Systems, Computer Organization, Software Systems, C/C++, Electric Circuits, Solid State Physics

Technical Skills

Hardware Verification: SystemVerilog, Verilog, RTL Design, Testbench Architecture, Self-Checking Testbenches, Logic Simulation, Waveform Debugging, Digital Logic
Processor Architecture: RISC-V, CPU Pipelines, Hazard Detection, Forwarding, Branch Handling, FSMs, Registers, Static Timing Concepts
EDA & Toolchains: Icarus Verilog (iverilog), GTKWave, ModelSim, Quartus Prime, Linux/Unix, Bash, Git
Programming: Python, C, C++, Embedded C/C++, Shell Scripting, REST APIs, JSON-RPC
Systems & Infrastructure: PC Hardware Assembly, Linux Administration, Network Configuration, Tailscale, RAID

Hardware Design and Verification Projects

32-Bit Pipelined RISC-V Core and Verification Suite — Mar. 2026 – Present
SystemVerilog, Verilog, Icarus Verilog, GTKWave | *riscv_core* — *RTL & Simulation*

- Architecting a synthesizable **5-stage RV32I pipelined processor** spanning instruction fetch, decode, execution/ALU, memory, and writeback stages.
- Developed **self-checking SystemVerilog testbenches** with directed and corner-case scenarios targeting pipeline hazards, data dependencies, forwarding, branch handling, and flushing.
- Built simulation workflows using **Icarus Verilog** and analyzed cycle-accurate **GTKWave waveforms** to isolate RTL behavior, timing relationships, and pipeline dependencies.
- Validated instruction execution across directed test suites, leveraging waveform-level debugging to identify and resolve RTL design bottlenecks.

Dedicated Linux Infrastructure and High-Availability Server — Aug. 2026 – Present
Ubuntu, Linux, Bash, Python, Tailscale, RAID — *Systems & Infrastructure*

- Assembled and configured an x86 Linux server from bare components, managing hardware integration, OS provisioning, networking, and remote access.
- Configured Linux background daemons, network interfaces, **RAID storage arrays**, and Tailscale encrypted mesh networking for resilient 24/7 operation.
- Developed Python and Bash automation for health telemetry, scheduled tasks, automated service restarts, and structured error logging.

Autonomous Agentic Engine and Workflow Automation Pipeline — Aug. 2026 – Present
Python, APIs, OpenRouter, Linux — *AI & Systems Orchestration*

- Engineered a Python multi-agent execution pipeline using dynamic tool calling, API orchestration, structured JSON-RPC communication, and automated task routing.
- Implemented execution logging and feedback loops to systematically identify failures, compile evaluation datasets, and improve downstream task precision.

Experience

Government of Canada – Statistics Canada — Toronto, ON
Student Enumerator — *Apr. 2026 – Jun. 2026*

- Follow federal confidentiality, data-governance, and quality-control procedures while collecting and validating field demographic data.
- Maintain precise records and audit validation logs to ensure complete reporting integrity and procedural compliance.

Government of Canada – Public Services and Procurement Canada — Toronto, ON
Customer Support Agent – National Service Call Centre — *Apr. 2026 – Present*

- Resolved high-volume operational inquiries using enterprise databases while strictly meeting service-level agreement (SLA) metrics.
- Troubleshot user issues and communicated complex technical procedures clearly within a high-concurrency federal service environment.

Leadership and Entrepreneurship

Independent Streetwear Brand — Remote
Founder and Creative Director — *Jan. 2021 – Present*

- Direct product development, manufacturing procurement, inventory logistics, digital infrastructure, and direct-to-consumer distribution.