

TRAVIS GEISINGER

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Computational Mathematics student seeking a co-op in software, low-level hardware (HDL), and applied ML.

Available May-August 2027

EDUCATION

Rochester Institute of Technology

Rochester, NY

Bachelor of Science in Computational Mathematics | Expected May 2028 (Accelerated MS 2029; applying to RIT BS/MS)

- **GPA:** 3.91 / 4.0
- **Relevant Coursework:** Linear Algebra, Differential Equations, Probability and Statistics, Discrete Mathematics, Multivariable & Vector Calculus, The Mechanics of Programming, Intro to Computer Science Theory.
- **Academic Honors:** Dean's List all semesters to date.

SKILLS

- **Languages:** Python, Go, C, C++, C#, Java, Verilog, LaTeX
- **AI / ML:** PyTorch, TensorFlow, OpenCV, Reinforcement Learning, MCTS, Game Theory, Hugging Face
- **Systems & Infrastructure:** Linux SysAdmin, Proxmox, Docker, Virtualization
- **Networking:** RouterOS (MikroTik), VXLAN, WireGuard, Tailscale, FRP, Cloudflare, Nginx, DNS, SSH
- **Developer Tools:** Git, GitHub Actions, Redis, SQLite, Bash, VS Code, GDB, Fish, PowerShell, JetBrains

TECHNICAL PROJECTS

Sarracenia (Anti-Scraper Tarpit)

Go, SQLite, Docker, Networking

- Built a tool in Go that traps scraper bots in a "tarpit" of procedurally generated, believable fake content.
- Wrote from-scratch Markov chain and templating libraries; renders template pages in single-digit microseconds for simple content, up to a few hundred microseconds for complex layouts.
- Rebuilt Markov training around a SQLite-backed corpus: a 200MB text file that took the original inspiration project about 48 hours to train now trains in a couple of minutes, keeping memory idle at 10-20MB.
- Containerized deployment via Docker; served over 2M tarpit requests within 5 days for one production user.

ULTRANET (Autonomous Game Agent Optimization)

Python, AI, Reinforcement Learning

- Rewrote a legacy ULTRAKILL AI agent, replacing a broken multithreaded Jupyter prototype (throttled by Python's GIL) with a modular architecture, keeping the original image-processing logic.
- Increased execution speed 20x (from ~1 FPS to ~20 FPS), letting the agent play in real time.
- Optimized decision-making and spatial analysis algorithms to cut latency in a fast-paced 3D environment.
- Switched image capture from ImageGrab to the faster DXCam, and rebuilt the input layer with ctypes for millisecond-level control.

Global Virtualization Cluster & Web Infrastructure

Proxmox, EPYC, RouterOS, VXLAN

- Physically built and rack-mounted the hardware (multi-device and multi-OS hardware stack) on a dedicated 240V circuit, some of which forms one site of a multi-site Proxmox cluster with a VPS-hosted quorum device to prevent split-brain.
- Spec'd power delivery and a remotely-managed UPS for 8-GPU (~2400W) scaling, powering the whole rack and reachable over the WireGuard/VXLAN tunnel, with auto-shutdown on low battery.
- Managed DNS for 4 domains, routing subdomains via Cloudflare Tunnels, FRP, and Nginx, with custom MX routing.

WORK EXPERIENCE

Self-Employed | Technical Hardware Specialist

2024 – Present

- Managed end-to-end hardware refurbishment and deployment for 120+ systems; diagnosed component-level failures, conducted automated stress testing, and executed BIOS/firmware provisioning.
- Disassembled, upgraded, and rebuilt desktops and mini PCs (RAM upgrades, component swaps) as part of the resale pipeline.

AWARDS & HONORS

Silver Award, ASA DataFest @ RIT 2026

March 2026

- Placed 2nd of 10 teams in the 'External Data' category (30 teams total, across 3 categories) at a 48-hour data analysis competition, analyzing the provided dataset alongside external datasets sourced by the team.
- Hosted a Tailscale mesh network and deployed a GPU-accelerated JupyterLab environment with MCP-integrated local LLM access for privacy-compliant, on-device LLM-assisted analysis.