

Mason Hawver

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Active Secret clearance | U.S. citizen | Open to relocation

EXPERIENCE

RTX, Collins Aerospace, Mission Systems

Software Engineer I

Rust, C++, C, Python, Bash

Cedar Rapids, IA

Jul 2025 – Present

- Pioneered SITL/HITL testing, ~20 tests per commit covering 95% of requirements, cutting hotfixes and bugs 30x.
- Brought up a new product line's hardware in 2 weeks for a customer demo, then integrated it onsite for the customer.
- Wrote tactical, safety-critical Rust C2 services for distributed systems, with 100% code and requirements coverage.
- Integrated RDMA (RoCEv2) and GPUDirect driver stacks for x86, FPGA, and GPU data paths.
- Wrote embedded C RTOS firmware for an OpenIPMC MCU over I2C, SPI, UART, with error-correcting reliable data links.
- Authored 100+ pages of design docs, presented them at technical reviews, and mentored 1 intern and 2 new hires.

RTX, Collins Aerospace, Mission Systems

Software Engineering Intern

Cedar Rapids, IA

May 2024 – Aug 2024

- Shipped 9 features and fixed 10 bugs in pilot-facing control software for airborne radios in embedded C on an RTOS, 3x the expected 6 tickets.
- First intern to present the team's quarterly plan, to 300+ people.

University of Minnesota, Robotics Perception and Manipulation Lab

Undergraduate Robotics Researcher, advised by Karthik Desingh

Minneapolis, MN

Sep 2023 – Mar 2025

- Pretrained a multimodal RGB, depth, and force-torque encoder, raising peg-in-hole success from 0/20 to 10/20.
- Created the data pipeline grad students used to train policies deployed on a UR5e arm.

University of Minnesota

Computer Vision Teaching Assistant under Volkan Isler

Minneapolis, MN

Aug 2024 – May 2025

- Built an auto-grading pipeline that cut grading time 10x, freeing the grad TA and professor for richer student projects.
- Designed homework on back-projection, homographies, RANSAC, stereo depth, image filtering, SVMs, and CNNs.

EDUCATION

University of Minnesota

B.S. in Computer Science, Minor in Mathematics, GPA 4.0, completed in 3 years

Minneapolis, MN

Sep 2022 – May 2025

- Coursework: Real-Time and Embedded Systems, Operating Systems, Optimal Filtering, Robotics, Differential Equations.

PROJECTS

Remote Fireworks Firing System | Embedded C, FreeRTOS, ESP32-S3, LoRa, nanpb

May 2026 – Jul 2026

- Built hardware and firmware for a handheld controller and 4-slot firing board, firing live shots from 100+ feet away.
- Designed a reliable two-way LoRa MAC layer to carry RPC-style Protocol Buffers commands over the air.

Autonomous Drone Navigation | C++, OpenGL, CUDA, PyTorch

Feb 2024 – May 2024

- Wrote an OpenGL dataset generator with depth rendering and octree collision, streaming frames to PyTorch in real time through CUDA-mapped framebuffers, and the training pipeline for a depth-only flight policy.

Cart-Pole in Hardware | Embedded C, AVR, PID control

Sep 2024 – Dec 2024

- Built the encoder and motor-driver circuit, quadrature decoding, and real-time control loop, with Kalman filter state estimation and PID control for balancing the pendulum.

SKILLS

Languages: Rust, C++, Python, Bash, C, CUDA

Embedded and Hardware: FreeRTOS, OpenIPMC, ESP32, LoRa, SPI, I2C, UART, Ethernet, RDMA (RoCEv2), GPUDirect, FPGA data paths

Infrastructure and Testing: Red Hat Linux, Real-Time Linux, Git, gRPC, Podman, k3s, QEMU, KVM, GitLab CI, SITL and HITL testing, UCI and AMS GRA open standards

Applied Mathematics: State estimation, Kalman filtering, control systems, computer vision, machine learning, pretraining, ray tracing, voxel meshing

Interests: Adult league hockey, lifting, graphics programming, road trips across the Midwest