Molly Maloney

+1 (734) 660-1744 ◆ mjmal@umich.edu ◆ Portfolio ◆ LinkedIn ◆ Willing to Relocate

EDUCATION

University of Michigan, Ann Arbor **Expected May 2027**
B.S. Computer Science – GPA: 3.48 – Focus: AI Systems, Infrastructure, and Cybersecurity *Ann Arbor, MI*

- Selected Coursework: AI Orchestration, Cybersecurity, Web Systems, Computer Organization, Data Structures
- Research Interests: Distributed Systems, Networking, Economic & Space Security, Critical Infrastructure

PROFESSIONAL EXPERIENCE

RTX BBN Technologies | Raytheon Space & Intelligence Press Release **May 2025 – Aug. 2025**
Security Research Engineer Intern - *DARPA* | *JS, Docker, SSH, Nginx, Python, Jenkins, Proxmox* *Boston, MA*

- Deployed and configured multiple Linux testbed servers for remote access to Android devices using a fork of an open-source Device Farm to create a flexible, scalable testbed model containerized in Docker and served through Nginx and Python
- Led two demonstrations for government stakeholders and 50+ attendees at a multi-million dollar DARPA program review
- Evaluated partner teams developing automated techniques for vulnerable exploit chain creation, modeling, and analysis

NASA | CLAWS Project Team Website | GitHub | Demo Video *Ann Arbor, MI*
Lead Software Engineer | *C#, Unity, .NET, Python, JS, React, Docker* **Sep. 2023 – June 2026**

- Developed mixed reality interfaces and autonomous rover swarm simulations for NASA lunar surface mission testing, integrating live astronaut telemetry, AI-assisted task planning and rover navigation, and mission control dashboards

President & Technical Project Manager | *Slack, Figma, GitHub, SysML, Google Suite* **June 2025 – June 2026**

- Led 80+ engineers across two NASA-sponsored projects, raised $25,000 to fund testing at NASA Johnson Space Center, and coordinated technical integration across software, infrastructure, simulation, and hardware peripheral subteams

RESEARCH EXPERIENCE

University of Michigan | Siemens Technology for Aerospace Robotic Servicing **Sep. 2026 – Nov. 2026**
Lead Software Engineer | *C++, Python, Siemens NX, Cameo/SysML, ROS2* *Ann Arbor, MI*

- Led 4 software engineers through requirements and architecture for a dual-arm robot designed to thread and clamp an aircraft wire harness, assessing the OpenArm/ROS2 stack and defining safety supervision and force control

University of Michigan | Aerospace & Computer Science Engineering **June 2026 – Oct. 2026**
Undergraduate Research Assistant | *Python, Julia, FastAPI, Pydantic, Docker, vLLM* *Ann Arbor, MI*

- Developed a multi-stage LLM orchestration layer for spacecraft simulations that routes mission intent, applies deterministic physics validation, and coordinates distributed Python/Julia workflows; now continuing it independently

University College Dublin | Computer Science Engineering | GitHub | Publication **May 2024 – Aug. 2024**
Undergraduate Research Assistant | *Python, C#, PyTorch, Llama.cpp, Whisper, Shap-E, Stable Diffusion* *Dublin, Ireland*

- Developed a Unity-based evaluation pipeline for generative AI models like Shap-E that systematically analyzes prompts and measures their effects on generated 3D scene complexity, object consistency, semantic coherence, and visual realism

PROJECTS

Dexterous Robot Arm | *Python, MuJoCo, Requirements & Failure Analysis* **Nov. 2026 – Present**

- Designing a five-finger hand and arm in simulation; found torque limits, addressed with assist springs and independent stops

Local AI Agent Fleet | *Python, OpenClaw, Ollama, Discord API, TOML, Git, pytest* **Sep. 2026 – Present**

- Built a local-first multi-agent platform with a plan/apply workflow that renders version-controlled agent definitions into gateway config, routing each agent to local Ollama or gated cloud models and enforcing per-agent tool allowlists and policies

Home Cybersecurity System | *Linux, Docker, Bash, SSH, WireGuard, Nginx, Raspberry Pi* **July 2026 – Present**

- Building a homelab unifying macOS, Windows, and Arch Linux with centralized administration, containerized services, network monitoring, and security experimentation, with remote access over WireGuard

SKILLS

- *Programming & AI:* Python, TypeScript, C, C++, C#, Julia, PyTorch, vLLM, FastAPI, React, Next.js, MuJoCo, ROS2
- *Infrastructure & Security:* Docker, Nginx, PostgreSQL, AWS EC2, Jenkins, Proxmox, Supabase, Unix, Ghidra, ESP32