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# ROSS A. MIKULSKIS

Software engineer with 2 years of experience building real-time and embedded systems, kernels, and distributed systems.

## SKILLS

- **Languages**: C/C++, Python, TypeScript, Terraform, Rust, OCaml, Java, Assembly (x86)
- **Frameworks**: Docker, Kubernetes/OpenShift, ROS 2, FastAPI, Flask, React, LangGraph
- **Tools**: Emacs, GNU Debugger (gdb), Python Debugger (pdb), QEMU, Make, GitHub Actions, Cloud Infrastructure (GCP, Azure), ConfZNS++, FEMU, arduino-cli, oscilloscope

## EXPERIENCE

**ProDex Labs** — **May 2025 - October 2025**
*Founding Engineer* — Brooklyn, NY

Visited factories and optimized workflows using LangGraph AI-driven Monte Carlo simulations.

- Prompt-engineered a multi-agent LangGraph to generate factory simulations from Operation Manager descriptions and produce custom KPI visualizations from simulation runs.
- Overhauled a single-container simulation system into a serverless microservice architecture to capture stochacitiy by running thousands of simulations in parallel.
- Minimized customer onboarding time by developing CI/CD Terraform pipelines to deploy into customer-owned GCP and Azure VPCs.


**Boston University** — **July 2024 - May 2025**
*Researcher* — Boston, MA

Developed kernel drivers and real-time applications for the Quest RTOS and Linux.

- Built a pub/sub framework to dispatch task pipelines with end-to-end real-time QoS guarantees across Yocto Linux and an RTOS running on a partitioning hypervisor.
- Benchmarked digital signal processing USB pipeline from RTOS to Teensy 4.1 with oscilloscope.
- Enhanced system stability by fixing Sound Blaster 16 audio drivers and file system drivers.


**Red Hat** — **September 2023 - July 2024**
*Cloud Engineering Intern* — Boston, MA

Conducted research and worked with the Mass Open Cloud team.

- Revised the Linux kernel to dynamically link with Redis, improving throughput by 22%.
- Implemented a serverless OpenShift proxy for Gradescope to autograde code requiring specific kernel versions on the Mass Open Cloud, saving professors hours of manual grading.
- Reduced container build time by 70% using Python Mamba and GitHub Actions caching.

## PROJECTS

**Distributed Consensus** github.com/rkulskis/raft

Implemented the Raft consensus algorithm within ROS 2 to ensure state durability and fault tolerance in real-time robotic systems.

**Standalone Operating System** youtu.be/qvlC51AeWjw

Co-developed an x86 operating system from the ground up on QEMU, featuring timer interrupts, FIFO multithreading, an inode file system with SATA persistence, and dual-mode operation.

**Bits of CS** bitsofcs.com

Published a free online computer science textbook with a grant from Boston University.

## EDUCATION

**Boston University** - Full Tuition Merit Scholarship — **September 2021 - May 2025**
*B.A., M.S. Computer Science, GPA: 3.73*