

ROSS A. MIKULSKIS

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Boston, MA

[linkedin.com/in/rkulskis](https://www.linkedin.com/in/rkulskis)

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

Founding Engineer

May 2025 - October 2025

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.
- Decoupled simulation APIs from core backend routing in the main Docker container via a Google Cloud Function microservice, enabling on-demand, massively parallel simulation execution.
- Introduced Github Actions CI/CD to run a PyTest suite then Terraform deploy into customer-owned GCP and Azure VPCs.



Boston University

Researcher

July 2024 - May 2025

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

Cloud Engineering Intern

September 2023 - July 2024

Boston, MA

Conducted research and worked with the Mass Open Cloud team.

- Increased Redis throughput by 22% by dynamically linking Redis with a Unikernel version of Linux to bypass traditional syscall overhead.
- Deployed a Kuberentes/OpenShift Horizontal Pod Autoscaler API to generically autograde code submissions in Open Education Docker containers hosted on the Mass Open Cloud.
- 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 in Python ROS 2 for real-time fault tolerance.

Standalone Operating System

youtu.be/qvlC51AeWjw

Developed an x86 operating system on QEMU, with interrupts, FIFO multithreading, an inode file system with SATA persistence, and dual-mode operation.

DBMS

github.com/rkulskis/CS660-Fall2024-pa

Built a DBMS in C++ featuring a Buffer Pool, Tuples, BTree Files, Queries, and Joins.

EDUCATION

Boston University - Full Tuition Merit Scholarship
B.A., M.S. Computer Science, GPA: 3.73

September 2021 - May 2025