Harun Adiyaman

US Citizen | harunadiyaman@gmail.com | (703)-855-2796| LinkedIn: ieharun | GitHub: eiharun

EDUCATION

Virginia Tech **Blacksburg, Virginia**
M.S. in Computer Engineering *Expected 2027*
B.S. in Computer Engineering: Networking & Cybersecurity, Software Systems: 3.51/4 GPA *Graduated May 2025*

EXPERIENCE

MIT Lincoln Laboratory **Boston, Massachusetts**
Summer Research Intern w/ Open & Embedded Systems Group *May 2025 – Aug 2025*

- Developed a playback simulator in C++ for an EO/IR sensor to facilitate system integration testing by removing hardware from the loop.
- Ported C++ signal processing kernels to Rust in order to compare performance with Cargo unit & integration testing.
    - Identified major bottleneck with profiling tool to improve performance.
- Presented all projects and findings clearly and effectively to the group, leads, and stakeholders.

Virginia Tech Major Design Experience **Blacksburg, Virginia**
High Altitude Ballooning at Virginia Tech - https://github.com/eiharun/SP25-20.git *Sept 2024 – May 2025*

- Led a 5-member team-based capstone project using agile workflow to design, prototype, and test a motor and a command-and-control system from the ground utilizing embedded systems to enable control of venting a balloon while at an altitude of 80,000ft via LoRa radio using a custom communications protocol.

MICS Lab at Virginia Tech **Blacksburg, Virginia**
Wireless Gait Sensor Development *Sep 2024 – May 2025*

- Engineered a low-power compact PCB using the TI CC2640R2F MCU, powered by a coin cell battery, to interface with pressure sensors and transmit gait data via Bluetooth in order to predict and prevent the falls of elderly people.

Virginia Cyber Range **Blacksburg, Virginia**
Capture The Flag CTF Developer *Jan 2023 – May 2025*

- Developed and deployed over 50 various technical challenges for CTF competitions at the high school and college utilizing skills in reverse engineering, networking, and cybersecurity.
- Mastered the ability to communicate and articulate complex and technical challenges clearly, both verbally and in writing, to a diverse audience of competitors, instructors, and supervisors. Mentored incoming interns.

PROJECTS

PinguOS - *https://github.com/eiharun/PinguOS* *Aug 2025 – Present*

- Developed a 32-bit x86 operating system from scratch, implementing a bare-metal C++/assembly kernel, Multiboot-compliant GRUB bootloader, and bootable ISO; tested and debugged using QEMU, gaining hands-on experience with kernel development, ELF binaries, bootloaders, and low-level system initialization.

Linux Scheduler Profiler Kernel Module Mar 2025

- Developed a Linux kernel module to profile task scheduling events by tracking context switches and recording runtime statistics per process. Utilized kernel hooks and the /proc file system to expose profiling data to user space, enhancing understanding of scheduling behavior and kernel-level process management.

Post-Lisp Language Interpreter & Drawing Application *Oct 2024 – Nov 2024*

- Implemented a Postfix Lisp interpreter in C++ featuring tokenization, AST construction, and evaluation via post-order traversal, with a focus on modular design, and integration, functional, coverage, and unit testing using Catch2.
- Developed a GUI drawing application using Qt that extends the post-lisp language interpreter to draw graphics.

ACTIVITIES AND LEADERSHIP

Deloitte Cyber Threat Competition **Fort Worth, Texas**
Technological Lead *Feb 2023*

CyberVT at Virginia Tech **Blacksburg, Virginia**
Member *Nov 2022 – May 2023*

SKILLS

Programming: Python, C, C++ [OOP], Rust, Linux Kernel
Tools: Docker, Git, Linux, FreeRTOS, GDB, Ghidra, Catch2, PyTest, Cargo, VirtualBox, Qemu, KiCad, Vim, Tmux, Agile