

# Ishaan Salian

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## Education

University of Massachusetts Amherst

Amherst, MA

*Bachelor of Science in Computer Engineering*

Expected May 2025

- Awards: Chancellor's Award, Dean's Honor Roll
- Coursework: Digital Design, Systems Programming, Networked Embedded Systems, Low Power Embedded Computer Systems, Computer Architecture, Synthesis and Verification of Digital Systems, Artificial Intelligence

## Technical Skills

Languages: C, C++, Python, Verilog, MATLAB, Bash

Hardware: ESP32, Raspberry Pi, Arduino, nRF52832 (ARM Cortex-M), DE1-SoC, Linux, Altium, KiCad (PCB design)

Tools: Git, GDB, RTOS, BLE, I2C, SPI, UART, Fusion 360 (CAD), Quartus Prime, Yosys, Oscilloscope, Logic Analyzer

## Experience

Coherent Corp.

East Granby, CT

*Controls/Electrical Engineering Intern*

June 2024 - August 2024

- Assisted in complete controls upgrade of manufacturing equipment, resulting in improved operational efficiency
- Identified and resolved critical overflow issues in **Allen Bradley** PLC system by implementing a solution that preserved counter accuracy without precision loss, preventing manufacturing calculation errors, reducing material waste by **5%**
- Collaborated with a **cross-functional team** of engineers to troubleshoot technical issues, ensuring minimal downtime

University of Massachusetts Amherst

Amherst, MA

*Undergraduate Teaching Assistant*

Various Courses

- Assisted in courses such as- Physical Computing, ECE Junior Design Project, Security Engineering
- Guided students through topics like **bare-metal programming**, **encryption algorithms**, and **hardware integration**

## Projects

Workspace Wizard | *KiCad, Fusion 360, BLE, OpenCV*

Senior Design Project

- Designing an autonomous desk-organizing robot, including 3D-printed components, and servo-actuated tracks
- Integrated a custom **ESP32** based **PCB** to communicate with an overhead computer running custom **Python** scripts
- Coordinating and collaborating with a **cross-functional** team on software, hardware, and mechanical tasks

FSM-Based Vending Machine Controller | Verilog, Yosys

November 2024

- Designed a **finite state machine** for a vending controller and synthesized it into gate-level **Verilog**
- Verified functional equivalence of FSM vs. gate-level netlist using **Yosys** and simulation traces

TinyTemp - Digital Thermometer | *KiCad, Embedded C, ATtiny85*

March 2024

- Designed a compact PCB using **KiCad**, reducing size by 33% to a compact 2-square-inch design
- Implemented power-saving algorithms in **embedded C** by sampling temperature values only when necessary
- Built the project at **76%** of the cost requirements, demonstrating effective cost management and resource optimization

keyRING, a Smart Key Holder - HackUMASS XI | *Arduino Uno, Embedded C*

November 2023

- Designed a system for sensing keys using a spring-like mechanical switch and sonar sensor for detecting movement
- Programmed the ATmega328P using **C** to communicate with the switch to detect keys using digital interrupts

Email Spam Detection using Naive Bayes | *Python*

April 2023

- Developed a **machine learning** classifier using SciPy.io and NumPy libraries for email categorization
- Achieved **94.1%** accuracy on unseen test data through effective training and feature optimization

## Leadership & Organizations

Electronics Co-Lead - UMass Mechatronics Team (ASME)

September 2023 - May 2024

- Co-led electronics development for mini golf robot in 2024 ASME Student Design Competition, securing top 5 finish
- Programmed microcontroller firmware to interface Xbox controller inputs via **Bluetooth** to precisely control motors