

Ishaan Salian

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Detail-oriented and adaptable Computer Engineering senior, proficient in Python and C, with a strong interest in embedded systems and PCB design. Seeking opportunities to apply my skills in dynamic engineering environments.

Education

University of Massachusetts Amherst

Amherst, MA

Bachelor of Science in Computer Engineering

Expected May 2025

- **Coursework:** Digital Design, Systems Programming, Synthesis and Verification of Digital Systems, Networked Embedded Systems, Security Engineering, Computer Architecture, Artificial Intelligence, Vulnerability Analysis.

Technical Skills

Languages: Python, Java, Embedded C/C++, Verilog, RISC-V, MATLAB, R

Technologies: Arduino, BeagleBone, ATmega328P, Altera FPGAs, Wonderware, Altium, KiCAD (PCB design), Unix, Linux

Tools: Soldering, Multimeters, Oscilloscopes, Quartus Prime, SPICE, GPIO, ADC, I2C, SPI, UART, Fusion 360, Git, Shell

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.
- Optimized Allen Bradley PLC programming, resolving length calculation discrepancies, reducing fiber wastage by 5%.
- Collaborated with matrixed team of engineers to troubleshoot technical issues, ensuring minimal downtime.

Department of Electrical and Computer Engineering

Amherst, MA

Undergraduate Teaching Assistant - Security Engineering

August 2024 - Present

- Assisting lab sessions for 120+ students on topics like cryptographic principles, secure coding, and hardware security.

Projects

Workspace Wizard | *KiCAD, Motor Controls, Object Detection*

Senior Design Project

- Designing a distributive system using object detection algorithm to autonomously organize a workspace.
- Leading development of hardware solutions, including custom PCB, Bluetooth communication and motor control.

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 door movement.
- Programmed the ATmega328P using C to communicate with the switch to detect keys using digital interrupts.
- Awarded “Cheapest Hardware Hack” for a cost-effective design with 97% positive feedback from 50+ students.

RISC-V CPU Simulator | *RISC-V Assembly, Verilog, Quartus Prime*

December 2023

- Developed a CPU simulator to execute RISC-V instructions and analyze cache performance with custom components.
- Programmed key CPU components and created a matrix-multiplication program in RISC-V assembly.
- Enhanced CPU simulator functionality with a 9-state Moore Machine to manage instruction flow.

Email Spam Detection using Naive Bayes Algorithm | *Python, MATLAB*

April 2023

- Developed a script utilizing scipy.io and NumPy libraries to implement a Naive Bayes classifier for spam detection.
- Applied Bayesian principles to train the classifier on the training dataset to effectively calculate probabilities.
- Achieved an accuracy rate of 94.1% with trained model on test data consisting of new, unseen emails.

Organizations

Liaison - Institute of Electrical and Electronics Engineers (IEEE)

March 2024 - Present

- Facilitating collaboration between engineering societies through joint events with 5 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.
- Utilized I2C for precise motor control with an Xbox controller through GPIO and Bluetooth modules.