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, Shell Scripting (Bash)
Embedded Systems: ESP32, Raspberry Pi, ATmega328P, BeagleBone Black, 6502 Microprocessor, KiCAD, DE1-SoC
Tools: Linux, Shell, Visual Studio Code, RTOS, BLE, Git, I2C, SPI, Quartus Prime, Oscilloscopes, GDB, Fusion 360

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 an interdisciplinary team of engineers to troubleshoot technical issues, ensuring minimal downtime

Projects

Workspace Wizard | *KiCad, Fusion 360, BLE, Object Detection* — Senior Design Project

- Designing an autonomous workspace organization system using object detection and motorized components
- Leading development of hardware, including custom PCB, Bluetooth communication and motor control
- Coordinating and collaborating with a cross-functional team including software, hardware, and mechanical tasks

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
- Awarded "Cheapest Hardware Hack" for a cost-effective design with 97% positive feedback from 50+ students

Hybrid Encryption and Decryption | *Linux, Python* — October 2023

- Developed a hybrid encryption scheme combining RSA and DES algorithms for secure image transmission
- Utilized Python scripting on a Linux operating system for DE1-SoC FPGA for encryption and decryption tasks

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
- 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

- Organized 5+ joint events, fostering collaboration between engineering societies and expanding professional networks

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 protocols for motor control via an Xbox controller, enhancing maneuverability and precision