Mayank Yerragondu
Ashburn, VA • myerragondu@gmail.com • (571) 491-7704 • github.com/mayankyerragondu

CAREER OBJECTIVE

High school senior combining IoT development and AI research to build intelligent systems. Experienced in smart home automation and using machine learning to detect security threats. Seeking a Computer Science degree to explore how connected technology can create adaptive environments that make communities safer, smarter, and more efficient.

EXPERIENCE

Hogar Controls | Intern **Summer 2024 & 2025**

- Developed integration workflows to enable Zigbee and Z-Wave devices to seamlessly register with a central hub, supporting wireless connectivity and remote operation.
- Troubleshot and optimized firmware and APIs for new device onboarding; collaborated with product teams on system testing and incorporated user feedback to improve performance and reliability.
- Performed a proof of concept (POC) using the Matter protocol to unify device logic at the application layer for cross-technology compatibility.
- Tested device communication and performance across different IoT protocols to ensure reliability and consistent operation.
- Created documentation and integration guides to help future developers understand workflows and maintain system consistency.

Technologies: NXP i.MX93, Python, Java, C++, Node.js, Slabs Z-Wave/Zigbee, JWT, AWS (EC2, S3, RDS, ECS)

Independent Research – Smart Home Security Using IoT Sensor Data - Mentored by Akhila Ashokan, UIUC (NLP) **August 2024 – Present**

- Investigated anomaly detection for smart home security by analyzing 40+ GB monthly of sensor data from 36,000+ devices (PIR motion, contact, environmental sensors)
- Implemented and compared Isolation Forest, One-Class SVM, Random Forest, and LSTM algorithms, achieving 68% false alarm reduction versus traditional threshold-based systems.
- Identified patterns in time, duration, frequency, and context to improve model accuracy and enable personalized anomaly detection
- Paper in preparation for submission detailing personalized anomaly detection approach for home security systems.

Technologies: Python, NumPy, Pandas, Scikit-learn, AWS (SageMaker, Glue, S3, CloudWatch)

EDUCATION

Flint Hill School, Oakton, VA **Aug 2023 to May 2026**

Relevant Coursework: AP Computer Science A, AP Calculus BC, AP Physics 1 & C, AP Statistics, Post-AP Linear Algebra, AP Macroeconomics,

Riverside High School, Leesburg, VA **Aug 2022 to May 2023**

Relevant Coursework: Tech of Robotics Design, Computer Math/Intro To CS

ACCOMPLISHMENTS & AWARDS

Awards:

- **Outstanding Intern of the Year -** Hogar Controls (2024)
- **National Arts Honors Society -** Outstanding Achievement
- **State Qualifier -** Track & Field (2024)
- **AP Scholar Award / Honor Roll**

Athletics

- **Varsity Football** - Wide Receiver / Defensive Back.
- **Varsity Track & Field** - Sprinter: 100m, 200m, 4x100, 4x200 Relays.

Leadership & Activities

- **Coding Mentor – Volunteer**
- **Math Modeling Team - Competitor**
- **Cybersecurity Club – Member**
- **Community Service – Volunteer**

Interests

- AI & IoT applications
- Cybersecurity
- Sports analytics
- Mentorship & community service