JAYA PEDA VIGNESH REDDY DUGGEMPUDI

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EDUCATION

TOWSON UNIVERSITY — Towson, Maryland
Master's in Computer Science — *May, 2026*

SRI VENKATESWARA COLLEGE OF ENGINEERING — Bengaluru, INDIA
B.E in Electronics and Communication — *Jan, 2024*

EXPERIENCE

Freelancer — Sep 2023 – Aug 2024
Ignite Education — *Andhra Pradesh, India*

- Assisted in developing an application designed to help students and to analyze their classroom experience.
- Played a key role in writing Arduino code, enabling the successful operation of hardware components.
- Assisted in front-end development tasks, focusing on enhancing user interface design and improving user experience.
- Collaborated with a small team to manage project tasks and completed the project.
- Conducted testing and troubleshooting to identify and resolve issues in both the software and hardware aspects of the project.

Intern — Aug 2022 – Oct 2022
Electronics and Radar Establishment, DRDO — *Bengaluru, India*

- Conducted research on techniques to improve GPS precision by studying various GPS parameters and the differential positioning of objects.
- Analyzed and reviewed IEEE papers related to GPS technologies, gaining a deeper understanding of their complexities.
- Developed and tested C programming and MATLAB codes aimed at minimizing GPS errors during operation.
- Collaborated with a research team to troubleshoot technical issues, ensuring bug-free and efficient code solutions.
- Applied advanced problem-solving and technical knowledge in real-world GPS applications to enhance precision and performance.

PROJECTS

AUTOMATED TRAFFIC SIGNALS BASED ON TRAFFIC PREDICTION USING MACHINE LEARNING:

- Developed a machine learning model to predict traffic flow and dynamically adjust signal timings, reducing congestion.
- Trained the model on historical traffic data to forecast real-time conditions at intersections.
- Implemented using Python and machine learning libraries, successfully improving traffic efficiency and reducing waiting times in simulations.

SMART HOME AUTOMATION SYSTEM:

- Designed and implemented a smart home automation system using Arduino to control various household appliances remotely.
- Integrated sensors and actuators to monitor and manage lighting, temperature, and security systems through a user-friendly interface.
- Developed Arduino code for real-time data processing and device control, enhancing energy efficiency and user convenience.
- Utilized wireless communication protocols (e.g., Wi-Fi, Bluetooth) to enable remote access via mobile applications, improving home automation capabilities.

TECHNICAL SKILLS

Languages: Python, Java, Arduino UNO.
Tools: Visual Studio Code, GitHub CoPilot, Blackbox.