Bhargav Hegde

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Graduate Software Engineer with 3+ Years of Experience, Specializing in Autonomous Systems, Automation, Networking, and IoT

Education

State University of New York at Buffalo, Buffalo, NY Aug. 2024 – Present
Master of Science in Computer Science and Engineering
Research Associate at CAVAS Lab - Connected and Autonomous Vehicle Applications and Systems

JSS Academy of Technical Education, Bangalore, India Aug. 2016 – Aug. 2020
Bachelor of Engineering in Computer Science and Engineering
Initiated and secured funding for an IoT lab and conducted instructional sessions for junior students.

Professional Experience

Tech Mahindra, Software Engineer Nov. 2021 – Jul. 2024
Engineered automation test scripts for Wi-Fi technologies using Robot Framework, ensuring robust system performance through Wireshark-based packet analysis.
Advanced IEEE 802.11mc technologies by implementing Wi-Fi RTT for precise device locationing and trained global teams.
Led DHCPv6 RD, designing test cases to optimize packet behavior and configurations, enhancing device reliability.

Tata Consultancy Services, System Associate Engineer Apr. 2021 – Oct. 2021
Developed Python-based RESTful APIs to automate business processes, streamlining data fetching, processing, and storage for efficient client reporting.

Pentagon Space, Intern 2020
Completed a 4-month Full Stack Python course, building web applications with Python, Django, and SQL, focusing on scalable software development.

Academic Projects

Ongoing Research - Autonomous Vehicle 3D Perception System (PyTorch, CUDA, ROS2, LiDAR)
Designed and implemented a real-time 3D object detection system, developing a CenterPoint-based object detection algorithm using PyTorch and CUDA to achieve high accuracy and efficiency.
Integrated this system with an Ouster LiDAR sensor to enable precise, real-time detection of objects in dynamic environments, enhancing the perception capabilities of autonomous vehicles.

Garbage Segregation Robot (Python, YOLOv3, CNN, Raspberry Pi, OpenCV)
Designed and developed a complete robotic waste segregation system integrating YOLOv3 and CNNs, capable of classifying garbage with 90% accuracy.
Automated the pickup and placement of waste into respective categories, securing funding from the Karnataka State Council for Science and Technology (KSCST).

Inventory Management System (Python, SQL)
Developed an advanced inventory management system for a mobile store using Python and SQL, creating a backend that facilitates real-time sales tracking and stock management.
Implemented automated invoice generation with multi-user support, integrating RESTful APIs to synchronize inventory data across multiple platforms.

Smart Kitchen Containers (JavaScript, Raspberry Pi, IoT)
Developed an IoT-based system using Raspberry Pi and JavaScript, creating a responsive backend to monitor kitchen inventory in real-time.
Automated online ordering via APIs, with a published technical paper in Matjournals.

Laser Shooter Using Object Detection (Python, OpenCV, Raspberry Pi, Servo Motors)
Developed a real-time object tracking prototype using OpenCV and Raspberry Pi, implementing computer vision algorithms. Enabled precise laser targeting using servo motors.

Technical Skills

Programming & Frameworks: Python, Java, C/C++, JavaScript, SQL, Django, PySpark, Spark, ROS2, Robot Framework
Tools & Technologies: Git, Docker, Linux, RESTful APIs, AWS, Azure, Google Cloud Platform, Wireshark, MySQL, JIRA, VS Code, PyCharm, IntelliJ, Eclipse, Testing, Debugging
Robotics & Computer Vision: YOLOv3, CNNs, OpenCV, PyTorch, TensorFlow, real-time object detection, system integration