Harsh Muriki

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Education

Georgia Institute Of Technology Atlanta, GA

Bachelors in Computer Science; GPA: 3.72 *August 2020 - May 2024*

Courses: Algorithms, Data Structures and Algorithms, Object Oriented Programming, Computer Vision, Robotics and Perception, Computer Organization, Statistics

Work Experience

Georgia Institute Of Technology Atlanta, GA

Undergraduate Student Researcher; Autonomous hydroponic robotic system *September 2021 - Present*

- Applying Object-Oriented CV algorithms coded in **python** to accurately position a robot arm for an optimal position with respect to the plant
- Employing **PyTorch** and **OpenCV** python libraries to modify 3D point clouds to convert them to volumetric analysis
- Utilizing ROS nodes to automate the data collection processes which reduced the manual workload by 50%
- Using **C++** and Python libraries to build an algorithm to enable both manual and autonomous control from onsite and remote locations

MealPirates Atlanta, GA

Co-Founder / Software Developer; Startup *January 2022 - Present*

- Leading ideation and front-end web development on a team of 4, using **Node.js** sub-stack to optimize app functionality and improve customer experience
- Developing a food delivery service that aims to deliver restaurant food at prices lower than the current delivery services
- Utilizing **GIT** version control for project collaboration and analysis
- Selected by Georgia Tech CreateX Startup launch program, offered **$400K** in seed funding to launch the product

Campus Talk Atlanta, Georgia

Intern; Startup *August 2020 - January 2021*

- Led quality assurance process for iOS and Android mobile app platforms
- Conducted competitor analysis across six companies and identified vital opportunities
- Scoped new connectivity features and led a team of designers and developers to bring the product to the market

Skills

- **Languages**: Python, Java, C++, Node.js, Next.js, ROS, Arduino, Ubuntu
- **Tools**: Docker, PyTorch, GIT, VS code, Computer Vision (Open CV), Open3D, Raspberry PI, APM 2.8

Projects

Experimental Flights Atlanta, Georgia

Software Lead (Delivery Station Sub-Team); Georgia Tech Vertically Integrated Projects (VIP) *August 2021 - Present*

- Building an autonomous drone to transport goods within Georgia Tech Campus
- Programming Arduino micro-controllers in C++ coding language to control and automate the entire delivery system
- Using Object-Oriented programming to design the methods for optimal usage and functioning of the delivery system

Smart Soap Dispenser Fremont, CA

Independent Inventor *June 2021 - Dec 2021*

- Planned and built a Smart Soap Dispenser, incorporating C++ programming language and sensors such as Infrared Receiver and ESP 32 micro-controller to control the dispenser's functionality
- An IoT-based device whose rate of flow of soap and the number of times the soap dispenses can be controlled via an app

HaemoCarrier Hyderabad, India

Lead Builder and Programmer *2018 - 2020*

- Led a team of 3 peers to conceive and develop a drone that can be used to commercially transport blood from blood banks to hospitals during emergencies and challenging traffic conditions
- Utilized the APM 2.8 flight controller with GPS, in configuration with Mission Planner software

Involvement and Leadership

Institute Of Electronics and Electrical Engineering Club (GT-IEEE) Atlanta, Georgia

Lead, Robotics Team *August 2022 - Present*

- Leading the Georgia Tech robotics team in the IEEE Southeast-Con 2023
- Teaching a cohort of first-year students the basics of Computer Vision algorithms and Robotic controls

Publications

- Chen, G., Muriki. H., Pradalier, C., Chen, Y., Dellaert, F. (2023). "A Hybrid Cable-Driven Robot for Non-Destructive Leafy Plant Monitoring and Mass Estimation using Structure from Motion", IEEE International Conference on Robotics and Automation (ICRA). **Pending Review**