ABHIROOP AJITH

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OBJECTIVE

Seeking internship roles as a Robotics Software Engineer.

EDUCATION

Master of Science in Robotics Engineering Expected 2023
Worcester Polytechnic Institute (WPI), GPA:4/4

Bachelor of Technology in Robotics and Automation Engineering 2016 - 2020
PSG College of Technology, GPA: 7.6/10

Relevant Coursework: Robot Dynamics and Control, Artificial Intelligence, Field and Service Robotics, and Computer Vision, Deep Learning, Motion Planning.

TECHNICAL SKILLS

MATLAB	C	C++ (Modern)	Python	LabVIEW	Linux(Ubuntu)	Raspberry Pi	Keras
ROS	Gazebo	Rviz	OpenCV	SolidWorks	PyTorch	Tensorflow	PLC

EXPERIENCE

Graduate Researcher, MER Laboratory,WPI,*USA* Jan 2022 - Current

- Currently working on implementing a Vision-Based Water Filtering System using classical and deep learning methods.

Robotics Intern, Adna Automation, *India* Sep 2020 – May 2021

- Fabricated an Automatic hand sanitizer to be used in various offices and hospitals.
- Developed interface and industrial applications for ABB and Fanuc 6-Axis Manipulators.

Research Intern, Westfälische Hochschule, *Germany* Feb 2020 - Aug 2020

- Developed a Convolutional Neural Network for Automatic detection of objects like a house, boat, car, and chair for a pick and place robot.

PROJECTS

Deep Learning-based Reverse Vending Machine / Tools: Python, Tensorflow Jun' 19 – Dec' 19

- Created a prototype to simulate classification of bottles for reverse vending machine using convolutional neural network.

Autonomous Tetris Solver Robot (For World Robot Olympiad) Jul' 18 – Sep' 18

- Developed a self-driving robot for stacking Tetris accurately in the play area given.
- The Robot used ROS, Image Processing, and CNNs for Object Detection.

Automatic Object Recognition Based on 3D CAD Models/Tools:AutoCAD,Tensorflow Feb' 20 Aug' 20

- Developed a Script in AutoCAD that was used to create the Dataset using the virtual camera.
- A Neural Network is trained to detect real objects using the CAD models of the Car, Plane, House, etc and an accuracy of 95% was obtained.

Autonomous Cars for Indian Roads/ Tools: ROS, OpenCV, Python Jun' 17 - Jul' 18

- Worked on a Self-Driving Car as a part of the MAHINDRA RISE Competition (Similar to DARPA). The scope of the project includes dynamic obstacle detection and real-time collision avoidance.
- Developed the lane detection script for the car and worked on areas of the project pertaining to image processing and path planning for autonomous navigation.

Real time Detection and and Pose Estimation of a Rubiks Cube/ Tools: Python, OpenCV Oct' 21

- Achieved Real Time Detection of the Rubiks Cube using ORB Algorithm on OpenCV. Implemented Kalman Filter to reduce noise and inaccuracy during constant movement of the object.
- The Pose Estimation was obtained by using PnP Algorithm.