

KIRAN AJITH

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EDUCATION

Professional Master of Engineering, Robotics

University of Maryland, College Park, MD

Expected 2024

Bachelor of Technology, Electronics and Communication Engineering

Vellore Institute of Technology, Vellore, India

2018 - 2022

SKILLS

Programming Languages:	C, C++, Java, Python, MATLAB, Verilog HDL, HTML, CSS, Javascript
Software:	ROS2, MoveIt2, Git, Tensorflow, OpenCV, Keras, PyTorch
Hardware:	Arduino, Intel FPGA, Raspberry Pi
Simulation tools:	Gazebo, Rviz, Proteus, TinkerCAD, Multisim, LT Spice

EXPERIENCE

Graduate Teaching Assistant

Jan 2023 - May 2023

A James Clark School of Engineering, University of Maryland

College Park, MD

- Worked as a faculty assistant for the course ENEB355 Algorithms in Python. Responsibilities were course preparation and planning, formulating and grading assignments, quizzes, and projects, conducting office hours; Conducted weekly lab sessions, provided academic support and mentored undergraduates.

Graduate Research Assistant

Oct 2022 - Jan 2023

Daikin Energy Innovation Lab, University of Maryland

College Park, MD

- Contributed to the [RoCo](#) project, in software testing and robotics. Achieved a 30% improvement in the operational efficiency of legacy prototypes by integrating high-resolution thermal cameras, improving imaging, field of view, and overall system energy efficiency..

Embedded Engineer Intern

Nov 2020 - Dec 2020

Kerala State Electronics Development Corporation

Kerala, India

- Engaged in hands-on PCB design and troubleshooting for various electronic devices. Contributed to the production and manufacturing of security systems, focusing on CCTV and access control mechanisms

PROJECTS

ARIAC 2023 Kitting Task Simulated the kitting task in the ARIAC (Agile Robotics for Industrial Automation Competition) competition conducted by the National Institute of Standards and Technology (NIST). It involves identifying the correct trays and parts to be picked up by a UR3 robotic arm and placing it on Autonomous Guided Vehicles (AGVs).

Kuka Mobile Robot Modeled a Kuka mobile robot using Solidworks; simulated a pick and place application in Gazebo with ROS Noetic; validated forward and inverse kinematics using Matlab's Peter Corke toolbox with 98% accuracy in mathematical calculations.

Camera Pose Estimation and Panoramic Image Stitching Computer vision application for camera pose estimation and panoramic image stitching using Python and OpenCV, implementing algorithms for noise reduction, edge detection, line detection, homography computation, SIFT feature detection, and brute force feature matching

Machine Learning Based Gesture recognition system Developed an LSTM model to train a self-created dataset that predicts American Sign Language (ASL) using Tensorflow.

Traffic light detection A real-time traffic light detection system using YOLOv3 and colour thresholding, implemented in a variety of lighting and weather conditions, enhancing safety in autonomous driving applications.