Prakash Ravi

St Joseph, Michigan | LinkedIn | (513) 807-6239 | prakashravimu@gmail.com | GitHub

EDUCATION

Miami University — **Oxford, Ohio, USA**
Master of Science in Electrical and Computer Engineering (CGPA 3.6) — *Jan 2020-Jan 2022*

Anna University — **Chennai, India**
Bachelor of Engineering (Electronics & Communication Engineering) — *Aug 2011-May 2015*

TECHNICAL SKILLS

Languages & Libraries: Python, C, Matlab, OpenCV, Ruby, cucumber, calabash, C#
Tools & Hardwares: Eclipse IDE, Raspberry Pi, CC2640R2 TI-BLE, ESP32.

WORK EXPERIENCE

Whirlpool Corporation — **Benton Harbor, Michigan USA**
Embedded Engineer
March 2022-Present

- Devised cloud Icon/Text detection algorithm to detect the text and various Icons on the UI. Created algorithm helped to validate the unparsable strings and Icons for non-android platform-based cooking products.
- Developed calabash ruby step definitions and automated the test cases to validate the connectivity features and UI for the android appliances.
- Ideated and developed a software tool using C# for automating the power interruption scenarios. The SW tool and relay hardware helped to automate 100+ cross functional connectivity testing and eliminated people's physical efforts.
- Supported SW Architect and Application SW development teams by providing scenarios validated results for boundary conditions or in extreme conditions to improve the SW quality.

Miami University — **Oxford, Ohio USA**
Graduate Research Assistant — *August 2020 – Jan 2022*

- Devised a RTOS C program to control a liquid crystal film by generating 180-degree phase-shifted PWM signal for different duty cycles in TI-CC2640R2 Launchpad microcontroller using Code Composer Studio.
- Establishing a bidirectional wireless BLE based communication between two TI-CC2640R2F devices to control a pair of Liquid Crystal film (wirelessly) for an electronic tintable sunglass application. Also incorporated light sensor into the system through an ADC protocol to automatically control the films.
- Building a vehicle location prediction model using Long Short-Term Memory (LSTM) neural network and differential time-based approach to achieve the accuracy from 100 to 30meters.
- Researching and incorporating charging strategy for the solar powered UAV base station by optimal altitude placement and multi-UAV resource sharing methodology to increase the airtime by 20% and to provide communication to the users.

University of Dayton Research Institute — **Dayton, Ohio USA**
Summer Research Intern — *May 2021-Aug 2021*

- Developed optimization algorithm using Nonlinear Programming (NLP) and Interior point optimization (IPOPT) solver to generate the reference trajectory for a nonholonomic robot model by minimizing an objective function of the system.
- Designed and implemented a PID-based closed-loop control algorithm and utilized Robot Operating System (ROS) to navigate the turtle Bot hardware in a reference trajectory and visualized the same in Gazebo simulator.
- Implemented SLAM algorithm in turtlebot-2 by mapping the environment using Astra depth camera and autonomously navigated the robot to reach its goal pose and visualized its path in RVIZ.

Tata Consultancy Services (TCS) Innovations Lab — **Chennai, India**
Analyst- Software Engineering — *Oct 2015-Dec 2019*

- Pioneered home automation in a hospitality industry to control the HVAC's, lights, and blinds using Voice assisted device.
- Built a WIFI-based indoor localization using ML algorithm by training the model using RSSI data from WIFI anchors.
- Engineered a IoT based Smart Mailbox solution in the postal system to improve the efficiency from 30% to 40%.
- Devised a C code on Atmega hardware for a parcel tracking solution to detect the breaches like tampering and vibrations.
- Integrated Amazon Web Services (AWS) with the WIFI-enabled ESP-32 microcontroller and devised a digital twin by publishing the sensor data and formed an interface to visualize it.

PROJECTS

- Incorporated Model Predictive Control algorithm to balance a cart seesaw system using state feedback control mechanism and tweaked the K-matrix to improve the response the balance time less than 5 seconds.
- Created a Window classification and bounding box prediction model using RCNN and RESNET in PyTorch and collected the dataset by drawing bounding boxes on images with an average precision of 55%.

LEADERSHIP EXPERIENCE

- Co-Founded an e-commerce startup and focused on selling engineering materials and provided consultation for students.
- Guided a couple of Undergrad students for their projects in machine learning and embedded software areas.
- Managed and educated robotics in all the centers across 3 major cities as a National Support team member in Bhumi-India.
- Improved content and trained people to lead for around 250 middle school students in Bhumi-India.