Vaibhav Raheja

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Education

Mukesh Patel School of Technology Management & Engineering, Mumbai, India 2017 – May 2023
Bachelors of Technology Computer Engineering (CGPA - 3.12/4) Expected
- Relevant Courses: Robotics, Embedded Systems, and AI

Mukesh Patel School of Technology Management & Engineering, Mumbai, India 2017 – 2023
Diploma in Computer Engineering Expected

Professional Experience

Research Intern Feb 2021 – Feb 2023
AIIMS (All India Institute of Medical Sciences) Hospital, New Delhi, India
- Working on a research project utilizing a robot arm that performs Robotic Oral Surgery with the help of control systems created using ROS and Python.
- Project funded by the Indian Council of Medical Research (ICMR).

Intern Jan 2020 – May 2020
Granuler: CIO Consulting, Mumbai, India
- Project CRM (Customer Relation Management Implementation)
  - Deployed a CRM system for Granuler CIO Consulting using HubSpot CRM.
  - Collected the client requirements and fulfilled them to improve the company's workflow by 70%.
- Project RPA (Robotic Process Automation)
  - Used UiPath to automate the CEOs workflow by reducing the time to less than 30 mins.

QA Intern Jul 2018
Intelligence Node, Mumbai, India
- Learned the basics of web applications, understood beta testing and executed tests on multiple web applications.

Academic Projects

Chronic Disease Detection System using Machine Learning 2021 – 2022
B. Tech Final Year Project
- Developed an expert system to predict chronic diseases by collecting various patient health details using Machine Learning models, providing a helping hand to doctors.
- Validated the model with an accuracy of over 90%.
- Implemented for: COVID-19, Pneumonia, Heart Disease, Chronic Kidney Disease, and Diabetes.

Soft Robotics Hand 2022
- Developing a Soft Robotics Hand controlled by stepper motors that can grab almost any object.
- Using OpenCV, it translates real-life hand movements onto itself programmatically.
- The future goal is to help doctors grip additional equipment during surgery.

Custom Surveillance Drone 2022
- Building a custom surveillance drone utilizing a 3D-printed modular body.
- The drone uses four 1200kv BDLC motors, an ESC, and an OpenPilot CC3D EVO Flight Controller.

Skin Disease Detection 2019
- Developed a machine learning model using Transfer Learning with CNN (Convolutional Neural Network) to detect over 20 Skin Diseases with an accuracy of 88%.

Home Automation 2020
- Developed a system to control most electronics from a mobile phone with support for voice commands using Google Assistant.
- This project uses an ESP-8266 microcontroller for controlling lights, fans, air conditioners, and RGB-controlled lights.

Technical Skills

- Programming: Python, C, C++, ROS, Machine Learning, Deep learning, HTML, CSS, Java
- Micro-Controller Boards: Arduino, Raspberry Pi, ESP
- Software: Autodesk Fusion 360, Microsoft Office, Android Studio, Arduino IDE, MATLAB, Anaconda

Extra-Curricular Activities

Intelligent Ground Vehicle Competition, Detroit MI, USA 2020 – 2022
Vice-Captain
- Achieved 3rd place at an annual international competition hosted at Oakland University, Michigan, in which multidisciplinary teams compete to create an autonomous vehicle according to a set of rules. Developed a fully functioning autonomous vehicle with object detection, path planning & traversal using LIDAR, Depth Cameras, and GPS.

Rotaract Club of Bombay Airport, Mumbai, India 2019 – 2021
Board of Director of Club Service from 2020-21
- Managed and initiated all Club Service activities, supervised and coordinated the work of the committees appointed for particular aspects of Club Service, and ensured the smooth and effective running of the club. These activities ensured that the club remained inviting, appealing, and attractive to outsiders.

e-Yantra Robotics Competition (eYRC), Mumbai, India 2020 – 2021
- Participated in a competition held by IIT Bombay to make a drone for the delivery of parcels.

The Editorial Project by MPSTME, Mumbai, India 2019 – 2020
Head of Logistics
- Managed and organized a concert by "The Local Train" at JRM Grounds.

Lane Detection using Hough Transform and Histogram 2019
- Wrote an article to explain Lane Detection using Computer Vision, using Hough Transform. This article has approximately 400 reads on Medium.

Roller Hockey, Mumbai, India 2012 – 2013
Team Captain
- Achieved 3rd place in a National Level Roller Hockey Tournament in Haryana.

Publications

Multi-Disease Prediction System using Machine Learning
IEEE International Conference on Futuristic Technologies (INCOFT)
- To be Published (Jan 2023)