Vaibhav Raheja

Portfolio | vaibhavraheja32@gmail.com | +1(217)-202-9970 | Vaibhav Raheja | Vaibhav-Raheja

Education

University of Illinois at Urbana-Champaign, *Master's Degree* Aug 2023 - Aug 2024
Major: Autonomy and Robotics

NMIMS' MPSTME, *Bachelor's Degree and Diploma* Jul 2017 - Jun 2023
Major: Computer Engineering CGPA: 3.18/4

Skills

Programming: Python, C++, Robot Operating System(ROS), OpenCV, PyTorch
Tools: Autodesk Fusion 360, Linux, Git, UiPath, VSCode

Work Experience

All India Institute of Medical Sciences (AIIMS) Hospital, *Research Intern* Feb 2021 - May 2023

- Collaborated with a multidisciplinary team on the development and execution of a pioneering research project funded by the Indian Council of Medical Research (ICMR), resulting in a 15% reduction in surgery duration and a 20% increase in surgical precision.
- Played a pivotal role in the design and assembly of a custom 2-directional catheter and mouthpiece integrated with a camera system, contributing to a successful intubation.
- **Technologies Used:** Python, 'xArm 5' robotic arm, Machine Learning, Robot Operating System (ROS), 3D modeling

Granuler: CIO Consulting, *Intern* Jan 2020 – May 2020

- Successfully implemented a CRM (Customer Relation Management) system using HubSpot CRM, streamlining workflow and increasing efficiency by 40%
- Automated CEO's tasks using UiPath for Robotic Process Automation (RPA), resulting in at least 20% saving in resourses.
- **Technologies Used:** HubSpot CRM, UiPath (Robotic Process Automation, RPA)

Projects

Intelligent Ground Vehicle Competition (IGVC), *Co-Captain* 2021 – 2023

- As Co-Captain of Team D.A.R.V.I.N at IGVC, I provided dynamic leadership in this prestigious international robotics competition held in Detroit, USA. Our team achieved impressive 2nd and 3rd place rankings in the highly competitive Cyber and AutoNav Challenge categories, demonstrating our excellence in autonomous vehicle navigation in challenging environments.

Chronic Disease Detection System using Machine Learning | (*Python, Pytorch, CNN*)

- Achieved an accuracy rate of over 90% in predicting chronic diseases, including COVID-19, Pneumonia, Heart Disease, Chronic Kidney Disease, and Diabetes. This system holds the potential to revolutionize early disease diagnosis.

Soft Robotics Hand | (*Arduino, 3D Modelling and Printing*)

- Developed a Soft Robotic Hand controlled by five individual stepper motors, enhancing dexterity and flexibility, with Arduino for control and 3D modeling and printing for construction.

Custom Surveillance Drone | (*Arduino, 3D Modelling and Printing, ESC Controller, Pixhawk*)

- Engineered a custom surveillance drone featuring a modular 3D-printed body and high-performance 1200KV BLDC motors, controlled via a Pixhawk Flight Controller and an ESC for motor control.

e-Yantra Robotics Competition (eYRC), 2020 - 2021

- Participated in an IIT Bombay competition focused on designing a drone for efficient parcel delivery.

Skin Disease Detection | (*Python, CNN*)

- Developed a machine learning model utilizing Transfer Learning and Convolutional Neural Networks (CNN) in Python, achieving an accuracy rate of 88% in the detection of various skin diseases.

Publications

Raheja, Vaibhav et al. (Nov. 2022). "Multi-Disease Prediction System using Machine Learning". In: *International Conference on Futuristic Technologies (INCOFT)*. URL: https://ieeexplore.ieee.org/document/10094382.