Shubham Parab

Mumbai, India | parabvshubham@gmail.com | +91-9594-660-151 | Portfolio | LinkedIn | GitHub

Education

Admitted - Master of Science | Data Science and Artificial Intelligence *2025 – 2026 (Expected)*
Newcastle University, United Kingdom

Bachelor of Engineering | Electronics Engineering *2018 – 2022*
Ramrao Adik Institute of Technology, Navi Mumbai
GPA: 8.12 / 10.00

Experience

Systems Engineer, Tata Consultancy Services (TCS) – Bengaluru, India June 2022 – Present

- Led navigation system development for omnidirectional and differential robots, incorporating real-time motion planning, path optimization, and collision avoidance.
- Integrated AI-driven modules for 6D pose estimation, object classification, and shelf anomaly detection using deep learning and computer vision.
- Developed custom vision pipelines for object detection and segmentation in challenging environments with transparent and reflective surfaces.

Robotics Engineer Intern, Roboslog – Remote May 2020 – Aug 2020

- Designed and simulated electronic circuits using ThinkerCAD for robotics-based projects.
- Authored a blog post to explain the practical application of simulated circuit design in low-cost robotics.

Publications

SMC 2024 (IEEE International Conference on Systems, Man, and Cybernetics) Accepted, 2024

- Teleoperated Omnidirectional Dual Arm Mobile Manipulation Robotic System with Shared Control for Retail Store [ref]
- System for Autonomous Management of Retail Shelves using an Omnidirectional Dual-arm Robot with a Novel Soft Gripper [ref]

Telepresence 2024 (IEEE Conference on Telepresence) Accepted, 2024

- ATMAS: Assistive Teleoperation Method using Augmented Reality and Switching Control [ref]

Projects

Pose Estimation for Human Skeleton Tracking 2023

- Built a computer vision system using MediaPipe to detect and track human body keypoints in real time for gesture recognition and robotic interaction.
- Enabled responsive behavior in robots based on detected poses, facilitating intuitive and contactless human-robot interaction.

Fruit Plucking Robot 2022

- Developed a custom-built robot for automated fruit harvesting in orchards.
- Designed with an omnidirectional mecanum wheel base and a robotic arm to enable mobility and precise fruit handling.

UR5 Arm for Warehouse Management 2021

- Built an automated warehouse solution where the UR5 robotic arm sorts packages based on order data received from different city locations.
- Integrated IoT-based order communication and package classification using Google App Script.

Skills And Technology Stack

- **Domains:** Computer Vision, Machine Learning, Robotics, SLAM, NLP
- **Programming Languages:** Python, C++, C#, JavaScript, HTML, CSS
- **Libraries/Frameworks:**NumPy, PyTorch, TensorFlow, SciPy, Pandas, Scikit-learn, spaCy, Django, Flask
- **Tools/Platforms:** ROS (ROS1 & ROS2), PyBullet, Gazebo, Git, Arduino, Microsoft Office Suite, Linux