

DARSH MENON

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ACADEMIC QUALIFICATION

Bachelor of Engineering (Honors.), Mechanical Engineering, Birla Institute of Technology & Science, Pilani, Goa, 2024, (CGPA- 7.16/10)

WORK EXPERIENCE

Robotics Intern, Asimov Robotics, Kochi, Kerala, Feb 2025 - Cont

- Designed and implemented a real-time multi-robot detection and navigation system for a robotic chess piece tracking system, utilizing computer vision algorithms for robot identification and LED blinking pattern recognition.
- Integrated machine learning techniques to enable dynamic robot localization and autonomous navigation in a multi-robot environment with obstacle avoidance algorithms, utilizing RANSAC for ellipse fitting in LED detection, ensuring accurate pose localization and applied OpenCV for processing camera feed and identifying dynamic blink patterns in real-time.
- Developed a communication framework
- k using ROS 2 and HTTP-based API protocols for efficient robot control and monitoring, including multi-robot tracking and pose estimation.
- Implemented client-server WebSocket connections to enable remote teleoperation for humanoid robots via joint-to-joint trajectory mapping.

Software Development Engineer - 1, Growth Jockey, Gurgaon, Haryana, June 2024 - Oct 2024

- Developed dynamic web pages for Nerivio and Dailybloom websites using Remix, TypeScript, PostgreSQL, and full-stack development to ensure seamless data management and real-time user interactions.
- Built an admin panel leveraging Google Authentication for lead management, payment processing, and data analytics on both websites, enabling efficient business automation and user authentication.
- Created a customized AMPERE website featuring EMI and savings calculators for enhanced financial tool integration and user engagement, optimizing front-end interaction and back-end computation.

Software Development Engineer Intern, Growth Jockey, Gurgaon, Haryana, July - December 2023

- Developed SleepyHug website pages with forms for lead generation, bulk orders, and warranty, integrated with Google Sheets.
- Created and integrated pages for 20+ cities, home, and product pages on Livpure website, driving site improvements
- Led rebranding of Indiabulls to Sammaan Capital, overseeing the overhaul of 130+ pages and 3500+ modifications.

Business Development Intern, Shriram Automall and CarTrade Exchange, Remote, June -August 2022

- Analyzed Cars24's B2C pre-owned car market across showrooms and online platforms.
- Assessed customer service and warranties, providing strategic insights for SAMIL's e-commerce expansion.

RESEARCH PROJECTS

Title: Autonomous Pick-and-Place Robot ([github](#))

- Developed a vision-powered robotic arm system using ROS 2 + MoveIt 2 + Gazebo.
- Implemented IK-based motion planning with MoveIt Task Constructor, collision-aware task execution, and gripper control.
- Created a fully simulated and deployable ROS 2 system for pick-and-place tasks.

Title: Navigation Algorithms for Autonomous Vehicles ([github](#))

- Implemented a full navigation pipeline using SLAM Toolbox and Nav2 on ROS 2 Jazzy.
- Developed costmaps, TF tuning, and YAML configurations for real-time localization and obstacle avoidance using simulated LiDAR.
- Tested and validated in Gazebo with real-time visualization.

TECHNICAL SKILLS

Programming Languages & Frameworks: Typescript, C++, JavaScript, JAVA, Python, PHP, ReactJS, Remix.js, Express,

Machine Learning & AI Tools: YOLO, TensorFlow, PyTorch, OpenCV

Robotics, Embedded Systems & Simulation: ROS, MATLAB, Simulink, Arduino, Raspberry Pi

Developer Tools & Databases: Git, Docker, VS Code, Postman, DBeaver, PostgreSQL, MongoDB, Shopify

Co-Curricular & Extracurricular Activities

Participant, Workshop on Robotics, Center for Technology and Education (CTE), Goa, October 2021

Member, Electronics and Robotics Club, BITS Pilani Goa Campus

Member, Wall Street Club, BITS Pilani Goa Campus