Archit Ritesh Jain

Pune, Maharashtra, India 411003

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Education

Vishwakarma Institute of Technology **August 2019 – May 2023**

Bachelor of Technology in Production Engineering ***[GPA – 9.27]*** *Pune, Maharashtra*

Relevant coursework includes Mechanical Design, Manufacturing, Robotics, Product Development, Engineering Design, Kinematics Modelling, Data Science, Computer Programming

Experience

Kalyani Strategic Management Services Technologies Solution Pvt Ltd **June 2024 – Present**

Robotics Engineer *Pune, Maharashtra*

- Collaborating cross-functionally to deploy robotic solutions in a real-world environment and driving end-to-end development of autonomous systems.
- Designing and developing perception modules for autonomous navigation in quadrupeds, humanoids, and AMRs.
- Building real-time robot control software and robust communication architectures for multi-robot systems. Spearheading projects across robotics software stacks, from sensor integration to mission-level autonomy.

e-Yantra, ERTS Lab, Indian Institute of Technology Bombay **June 2023 – June 2024**

Senior Project Technical Assistant *Mumbai, Maharashtra*

- Researched grasping algorithms for picking unknown objects in utilization with a two-finger gripper UR5 robotic arm. Developed an Elliptical-based Centroid Grasp method using point cloud segmentation. Formulated a unified ROS-based pipeline integrating Dexnet, Height Assistive Feature, and Grasp Net algorithms to facilitate seamless development.
- Working on integrating a mobile robot and a UR5 robotic arm, working collaboratively to pick and efficiently sort packages within a warehouse for packaging. Implemented using ROS with SLAM, Nav2 Stack and MoveIt tools.
- Delivered hands-on embedded systems training to 100+ faculties nationwide and instructed 1300 students in robotics.

Flytbase Labs Pvt. Ltd **January 2023 – May 2023**

Robotics Engineer Intern *Pune, Maharashtra*

- Led the development of a robotics software platform for autonomous Beyond Visual Line of Sight (BVLOS) drone operations. Created middleware applications for edge devices embedded in drones as a ROS developer.
- Performed software programming, conducted modular testing to improve algorithm scalability, and provided vital technical support to overcome challenges related to drone automation.
- Implemented waypoint mission planning and failsafe triggering services which integrate with a common platform for monitoring and controlling drones remotely from anywhere worldwide.

Projects

Robot Actuator Joint Design | *Gear Design, Torque Calculations, Material Selection* **July 2022 - October 2022**

- Designed and manufactured a custom, compact, and heavy-load-carrying robot actuator.
- Engineered the actuator to serve as an elbow joint in a robotic arm, featuring a gear reduction of 10:1 and generating 42 Kg-cm of torque with the aid of a NEMA-17 Stepper Motor.

Humanoid Robot | *Mechanical Design, Stress Analysis, Machining, 3D Printing* **May 2021 - October 2021**

- Designed and led the development of parallel manipulators for precise neck movement in the humanoid robot.
- Engineered custom linear actuators to optimize shoulder joint functionality, and performed gears design calculations.
- Created mechanical drafts for machining operations and laser cutting with proper geometric dimensions and tolerances.

Skills

Technologies & Tools:: AutoCAD, Autodesk Fusion 360, Ansys, CATIA V5, SolidWorks, 3D Printing, Computer Vision, Edge Computing, Linux, Git, Docker, Mavros, Nav2 Stack, ROS 1, ROS 2, SLAM
Languages: Python, C, C++, HTML/CSS, Javascript
Interests: Robotics, Manufacturing, Drones, Robotic Arm, Mobile Robotics, Sensor Fusion, Software Design

Achievements / Extracurricular

- Achieved 1st place in the Smart India Hackathon - Hardware Edition 2022, recognized by the Indian Ministry.
- Secured AIR 5 in the DD National ABU Robocon 2022, securing the Best Software Award.
- Certified SolidWorks Additive Manufacturing Associate by Dassault Systèmes.
- Conducted trainings and workshops on various robotics domains.
- Volunteered in social welfare activity to record audiobooks for blind school students.