Praneeth Boddeti

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SUMMARY

Master's candidate in System Engineering with 4+ years' experience in CAD, rapid prototyping, and robotics programming (Python, C/C++). Proficient in 3D modeling and control systems, with hands-on experience in designing and deploying automated manufacturing solutions. Skilled at collaborating with cross-functional teams to implement and support smart robotic systems, ensuring efficiency and customer success in high-mix manufacturing.

EDUCATION

M.S. Robotics and Autonomous Systems (System Engineering) January 2024-Present
Arizona State University, Tempe, AZ 3.68 GPA
B.S. Mechanical Engineering May 2017-June 2021
SRM Institute of Science and Technology, Chennai, India 3.65 GPA

TECHNICAL SKILLS

Programming Languages: Python, C/C++, MATLAB
Design: AutoCAD, SolidWorks, Fusion 360, ANSYS
Others: ROS, RViz, Gazebo, Linux, Ubuntu, MuJoCo, SLAM, GIT, GitHub, IoT, PLC Programming
Embedded Systems: Arduino, Jetson Nano, Jetson Orin Nano, RTOS
Certifications: UR 5 e-Series Pro Track

PROFESSIONAL WORK EXPERIENCES

Tata Consultancy Services, Bangalore, India: Assistant System Engineer 06/2021-11/2023

- Responsible for developing solutions to harden internal and customer systems against fraudulent intrusion. Role included assessments, risk evaluations, solutions, testing, and implementation.
- Led a 15-member team to accelerate client delivery by 30% using Power Automate and Service Now

Torous Robotics: Robotic Design Engineer Intern 05/2020-07/2020

- Collaborated with a team of 10 engineers to design a modular robot that assists COVID-19 patients in hospitals by transporting food and medicines, utilizing mechanical design in Fusion 360, Solid works, Gazebo and Python.

Glatt India Pvt. Ltd, Pune, India: Design and Manufacturing Intern 06/2019-08/2019

- Co-designed granulators and tablet coaters in AutoCAD/P&ID and built PLC simulations to validate their processes.
- Studied plasma welding, TIG, and CNC machining; co-designed modular, multi-process manufacturable components.

PROJECTS

Predator-Prey Model with Turtlebots to demonstrate location tracking without GPS (ROS2, OpenCV, Linux). Spring, 2025

- Used ROS2 Humble on the turtlebots with Fast DDS middleware for us to be able to communicate with the robots and the robots with each other. Implementing sensor fusion of IMU and LIDAR data with Kalman filtering to reduce noise.

Localization, Object detection and obstacle avoidance on an Autonomous Robot (SLAM, ROS2, LIDAR) Spring, 2025

- Designed and deployed an autonomous omnidirectional robot on Jetson Nano, integrating ORB-SLAM, LiDAR, and object detection in RViz for tin can localization, with obstacle-aware path planning.

Maze Solving, Path Planning and Pick and Place using UR5 and MyCobot600 (Python, MATLAB, Teach Pendant). Fall, 2024

- Utilized computer vision to detect a maze via a camera and employed the watershed and A* algorithm to refine the path by converting multiple waypoints into a concise set of optimal waypoints for both the robotic arms.
- Pick and Place using the inbuilt UR5 software to move around objects in the LAB for repeated testing using UR Script.

Published Paper on an Omni-Wheel based smart wheelchair (CAD, Arduino, IoT). Fall, 2021

- Received the Best Project Award in the Department of Mechanical Engineering at SRM Institute of Science and Technology, Chennai, for an innovative design and implementation and assembly of a 3D printed omni-wheel driven, IoT enabled wheelchair prototype that can convert into a stretcher for patients.

WORK EXPERIENCE

Arizona State University, Tempe, AZ: Grader (Mechanical Engineering Systems) 01/2025–05/2025

- Assisted professor for a graduate level course teaching the design of CAMs, Shafts and Gears for mechanical systems.

EXTRACURRICULAR EXPERIENCE

American Society of Mechanical Engineers (ASME) Student Chapter Secretary, Chennai, India 1/2018 - 1/2021

- Ensured the smooth flow of work in all the technical and non-technical teams.
- Organized several meetings and events to build teamwork amongst the teams.