Pranav Sanjeev Jain

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Education

Worcester Polytechnic Institute (WPI) Worcester, MA, USA

4-Year Bachelor of Science in Robotics Engineering, ***GPA 4.0 (High Distinction)*** *Aug 2022 – May 2025*

- **Dean's List** (All Semesters) & **Charles O. Thompson Scholar** (March 2023)
- **Relevant Coursework:** Mechanical Applications in Robotics, Sensing and Perception in Robotics, Robot Manipulation, Robot Navigation, Soft Robotics, Metal Additive Manufacturing, Control Engineering, Embedded Computing in Engineering Design, Software Engineering

Technical Skills

Languages: Python, C++, Java, MATLAB, SQL, JavaScript, HTML/CSS
CAD Softwares: Fusion 360, SolidWorks, Autodesk 3ds Max, Altair Inspire, Zbrush, Adobe Substance 3D Painter
Fabrication & Machining: Laser Cutting, CNC Milling, 3D printing, Oscilloscope, Soldering
Computer Skills: Microsoft Office 365, Adobe Photoshop
Others: ROS, Gazebo, Rviz, PCB design (KiCad), Git

Experience

Robotics Teaching Assistant, Fun Robotics, Dubai, UAE Jun - Jul 2022

- Assisted students in building & programming robots for various challenges, enhancing communication skills.

Projects

Soft Robotic Eel | *Arduino, ESP32* Aug 2024 - May 2025

- Developed a soft robotic eel for aquatic locomotion, focusing on the eel's mechanical aspect, making it modular & getting it ready for depth control & sensor integration.
- Has potential applications in understanding the biological eel better, underwater exploration, & more.

Robot Mapping & Navigation | *Python, GitHub, ROS, SLAM, AMCL* Oct - Dec 2024

- Developed a ROS-based navigation system for an autonomous robot. The robot could autonomously map, localize, & navigate through a maze using GMapping, SLAM (Simultaneous Localization and Mapping), AMCL (Adaptive Monte Carlo Localization), & A* path planning algorithms.

Robotic Arm Manipulation | *Python, GitHub, ROS, DH parameters* Aug - Oct 2024

- Developed a ROS-based arm manipulation system that used forward & inverse kinematics to sort balls using an external camera for ball position & color detection.
- Utilized Denavit-Hartenberg (DH) parameters to calculate transformation matrices for 4 DOF arm.

Soft Robotics Project Mar - May 2025

- Developed a semi-rigid continuum robot for in-pipe locomotion.

Adnoc 4x4 in Schools Technology Challenge | *Java, Arduino* 2022

- Developed an app-driven 4x4 CyberTruck car capable of traversing multiple land terrains for Adnoc 4x4 in Schools Technology Challenge, winning a trophy for Trailer Tow Challenge.

Software Engineering Project | *Python, Flask, SQL, Docker, GitHub, HTML* Jan - Mar 2025

- Developed a research portal website that connects undergraduate students with faculty looking for researchers.
- Developed a full-stack web application using Python with Flask serving as the API.
- Integrated with WPI's login system using OAuth

Inter-Qualifying Project (IQP): The Implications of AI in the Workforce Aug - Dec 2023

- Analyzed AI's impact on the workforce for ANSI & WorkCred through archival research & expert interviews.
- Developed actionable recommendations & implementation road map for AI-related issues for ANSI & WorkCred.

Others

Honor Society: Tau Beta Pi (TBP) 2024 - Present

Scholarships: WPI Presidential Scholarship 2022 - 2025

Guest speaker at WPI on AI & ChatGPT Apr 2024

- Discussed AI advancements, challenges, & its impacts at home & the workplace, including insights from my IQP.

Artificial Intelligence (AI) & Machine Learning Workshop by Stanford University Alumnus Dec 2019

- Gained technical expertise with various AI models, & developed an emotion detection application using Python.