Denver Glenn Pereira

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EDUCATION

University of California San Diego   Expected March 2026
Master of Science (M.S) in Electrical and Computer Engineering - Robotics

Narsee Monjee Institute of Management Studies   August 2024
Bachelor of Technology (B.Tech) in Mechanical Engineering, **GPA 3.88/4.0**

WORK EXPERIENCE

Robotics Software Intern - Drishti Works Pvt. Ltd.   **May 2023 - Oct 2023**

- Improved the safety and navigation of the autonomous robot around people by 30% by adding new functionality using C++ and Python to modify the autonomy framework.
- Developed code to evaluate the performance and well-being of the autonomous robot, providing constant feedback and reassurance, while the robot is operating 300 miles away from home.
- Reduced operating costs by 20% (100+ man hours) by implementing automatic annotation for 5000 images and partnering with the AI team to train a computer vision model
- Increased reliability and robustness by building Docker containers and scripts to split the autonomous robot's navigation software into multiple modules, incorporating fail-safes and test cases for each module

H.V.A.C Intern - Hosmac Pvt. Ltd.   **Jan 2022 – May 2022**

- Performed heating and cooling load calculations for hospitals and determined the equipment specifications
- Developed an automated data migration solution to transfer legacy project data to a new software using Python and Excel VBA (Visual Basic Advance) that reduced transition time by 3 months
- Merged layouts from different departments by collaborating with multiple teams to create a 'master' floor plan using AutoCAD, resulting in an improved layout, and errors being identified faster
- Coordinated with Vendors and Clients to select HVAC equipment that meets customer needs and design specifications, leading to the selection of more economical equipment decreasing costs by 20%

PROJECTS

Agricultural Robot, *NMIMS University*   **Dec 2023 - July 2024**

- Developed a farming environment simulation using Gazebo and ROS (Robot Operating System) with accurate farm layout and realistic simulations of people walking to improve the testing and simulation
- Calibrated stereo cameras to determine the intrinsic and fundamental matrix of the camera which were used to 'correct' camera images resulting in 15% more accurate predictions from the A.I
- Trained a computer vision model (YoloV5) using tensorflow and OpenCV on with a 100+ images of different plant models with varying diseases to accurately predict plant disease in the real world

Autonomous Robot, *NMIMS University*   **Nov 2022 - Nov 2023**

- Designed the chassis using Design for Manufacturing and Design for Assembly principles, cutting down costs by 20%, increasing production speed and making the robot easier to work with.
- Utilized ROS (Robot Operating System) to implement mapping, navigation (using Lidar SLAM) and sensor fusion of wheel odometry and inertial data using an extended Kalman filter (EKF)
- Implemented a PID (Proportional-Integral-Derivative) control system for the autonomous robot's wheel velocity, that allows for dynamic parameter modification and eliminates integral windup

PLC Hydraulic System, *NMIMS University*   **Nov 2022 - Dec 2022**

- Programmed a Bosch PLC (Programmable Logic Controller) to control multiple pneumatic and hydraulic actuators based on user input and sensor data to reject machine parts from a conveyor belt
- Utilized Open UA (Communication Protocol) to have PLCs seamlessly communicate with sensors from varying manufacturers, reducing costs of having to buy equipment from the same supplier
- Centralized PLC sensor data using Node Red and ThingSpeak and then applied machine learning to the collected data for analysis and inference, providing predictions on feedback and performance

SKILLS

Software: C, C++, Python, Docker, Git, ROS, Gazebo Arduino, SolidWorks, Fusion360, OOP, Algorithms