Neet Mehulkumar Mehta

Worcester, MA | nmehta@wpi.edu | +1 (774) 253 7865

EDUCATION

Worcester Polytechnic Institute (WPI) — **Worcester, MA**
Master of Science- Robotics Engineering, GPA- 3.66/4.00 — Dec 2022
Nirma University — **Ahmedabad, India**
Bachelors in Mechanical Engineering, GPA- 7.8/10.00 — May 2020

KEY SKILLS

- **Programming Skills**: C++, Python, MATLAB
- **Tools and Libraries**: TensorFlow, ROS, Gazebo, OpenCV, CARLA simulator, Simscape, Simulink, Git, Solidworks, ANSYS, Blender 3D.

WORK EXPERIENCE

Institute for Plasma Research (IPR) — **Gandhinagar, India**
Research Intern — Jan 2020 – May 2020

- Developed a fully working model 5-DOF serial manipulator on an omnidirectional platform for inspection of Tokamak reactor that can be controlled by VR setup.

RESEARCH EXPERIENCE

Cognitive Medical Technology (COMET) Lab, WPI — **Worcester, MA**
Modeling the Kinematics and Dynamics of Continuum robot using Machine Learning Techniques — Sept 2021 - Present

- Develop a Machine learning algorithm that most accurately models the complex and recursive kinematics and dynamics of continuum robots.
- Developed a kinematics and dynamics model by neural network using TensorFlow.

ACADEMIC PROJECTS

Real-time monocular vision-based SLAM with NVIDIA Jetson, CNN, and ROS — Sept 2021 – Present

- Study different CNN architectures and techniques for depth reconstruction from a single image.
- Use the developed CNN architectures as a part of the RTAB-MAP vSLAM algorithm pipeline to estimate the position of the moving Jetson nano and build the 3D map of the unknown indoor environment.

Motion Forecasting for Autonomous Vehicles — Sept 2021 – Present

- Train a combined GANs and LSTM based architecture for trajectory prediction of self-driving cars on the dataset.

Self-driving car simulation in CARLA simulator — Feb 2021 – May 2021

- Implement Autonomous Driving algorithms for turning the vehicle in low traffic scenarios in the CARLA simulator using python API.
- Implemented Autonomous overtaking in low-traffic conditions for the autonomous agent in CARLA using python API.
- Personalized the turning experience by changing the parameters of the curves.

Implementation and Visualization of Autonomous Robot Path Planning Algorithms — Feb 2021 – May 2021

- Implemented discrete and sampling-based algorithms such as A*, Weighted A*, Dijkstra, Probabilistic Road Map(PRM), Rapidly exploring Random Tree (RRT), RRT*, and Informed RRT* to navigate through obstacles in a 2D environment.

Design and Simulation of a Quadruped Robot in different gaits and environments — Feb 2021 – May 2021

- Developed Kinematic and Dynamic model of the quadruped using different approaches and implemented different gaiting sequences (eg: walk, trot, gallop).
- Developed control architecture for all the legs of the quadruped.

EXTRACURRICULAR ACTIVITIES

- **Teaching Assistant:** Assisted professor in organizing two graduate-level courses in Summer ’21.
- **Publicity Volunteer:** Gathered the highest number of students from other universities for national level Tech-Fest ‘Praveg ’18.