RUSHI BHAVESH SHAH

+1 (425) 273 4714 | shahrushh2210@gmail.com | LinkedIn | GitHub | Portfolio

EDUCATION

New York University Tandon School of Engineering Sept 2021 - May 2023
Master of Science – Mechatronics and Robotics Engineering *(GPA - 3.75 / 4.00)*
Relevant Coursework: Robot Perception, Reinforcement Learning & Optimal Control, Robot Localization & Navigation

University of Mumbai - K. J. Somaiya College of Engineering Aug 2016 - Oct 2020
Bachelor of Technology – Mechanical Engineering *(CGPA - 7.15 / 10)*
Relevant Coursework: Artificial Intelligence, Industrial Robotics, Automation and Control, Applied Mathematics

WORK EXPERIENCE

Residential Energy Product Engineer - *Tesla, Inc, Palo Alto, CA*
March 2025 - Present

- Spearheading KPI development and improvement for Tesla's AC Charging products along with Powersharing features to power homes and other small loads using a vehicle for a fleet of 100k+ vehicles
- Defining data signatures that uniquely identify recurring issues to develop automated issue detection and diagnostics algorithms to improve product fleet health
- Developing and executing data pipelines on fleet logs to uncover trends, initiating cross-functional workstreams that are driving product performance improvements
- Collaborating with engineering and manufacturing stakeholders to implement design and process changes, improving product quality and reliability across both existing and next-generation products
- Provided firmware and mechatronics expert support on escalated issues, minimizing system downtime
- Identified trending product issues and translated insights into technical documentation, automated diagnostics, and product enhancements

Expert Engineer - *Teoresi, Inc, Troy, MI* July 2023 - March 2025

- Performed commissioning and testing the Powertrain and High Voltage architectures(including thermal and Battery Management Systems) of new prototype EVs and plug-in hybrids(REPB) vehicles
- Used CANalyzer to troubleshoot and analyze sensor signals from ECUs, to diagnose and enhance the powertrain performance
- Validated ECU software using VFlash for flashing and reprogramming, ETAS-INCA for calibration and measurement, and CANape for comprehensive diagnostics and testing, ensuring robustness and compliance with FMEA principles
- Facilitated prototype integration and testing, by running On-board Diagnostics for debug and troubleshooting purposes

Control Systems Engineer - Intern - *DEKA Research and Development Corp, Manchester, NH* Feb 2023 - April 2023

- Designed a C++ and Python framework for detecting and sharing road surface-type and occupancy data among a fleet of autonomous security robots
- Merged and implemented deep learning algorithms for road surface and obstacle detection, generating occupancy data as images
- Developed an image stitching algorithm to regenerate a segmented base map from multiple mapped data images
- Modified and implemented computer vision algorithms for extracting and compressing mapped data for cloud storage and updating the global base map for other robots

Graduate Research Assistant - *Automation and Intelligence for Civil Engineering Lab, NYU* [Link] June 2022 - May 2023

- Orchestrated real-world experiment for feature based exploration & navigation framework using ROS and Python *(publication)*
- Designed and manufactured a mobile platform by interfacing Nvidia Jetson TX2 and iRobot Create2
- Performed Deep Learning RNN model inference on Linux server, leveraging three-way SSH communication for data transfer
- Simulated the experiment in Gazebo and deployed in real-world by using a 360 camera and a 3D LiDAR on robot

SKILLS

Programming Languages*:* Python*(8/10)*, C++*(7/10)*, Matlab*(8/10),* ROS*(8/10),* Java(6/10), Object Oriented Programming
Libraries*:* OpenCV, Open3D, NumPy, Scikit-Learn, SciPy, Pandas, Keras, PyTorch, Tensorflow, Matplotlib, Pyqt5, Seaborn
Tools & software*:* CANAlyzer, INCA, CANoe, Linux, CMake, Gazebo, Rviz, Simulink, Simscape, Docker, AutoCAD, Solidworks
Hardware*:* Jetson TX2, Jetson Nano, Raspberry Pi, Arduino, PLC, Parallax Propeller, LiDARs, IMU, Cameras, Radars
Technologies*:* Computer Vision, Controls, Sensor Fusion, Data Structures, Communication(CAN, ETK, I2C, TCP/IP), Git, CI/CD

PROJECTS [Link]

- V-SLAM Based on Semantic Segmentation for Dynamic Objects removal to reconstruct static scene [Link] [Video]
- Vision based pose and velocity estimation of a micro aerial vehicle using RANSAC [Link]
- Low Dimensional Projection of images and visualization using tSNE [Link]
- Custom Iterative Closest Point (ICP) for 3D point-cloud alignment [Link]
- Automatic Image Analysis and Camera Calibration [Link]

EXTRA-CURRICULAR ACHIEVEMENTS [Link]

- Vice-captain for Tesla, Inc's Badminton team
- Secured 3rd place at 2024 Michigan Open Badminton Tournament
- New York University Badminton Team captain for 2022 - 2023
- Secured Bronze medal (3rd Place) at North Eastern Inter Collegiate Badminton Tournament in 2023
- Secured Silver medal (2nd place) at North Eastern Inter Collegiate Badminton Tournament in 2022
- Two times winner at New York University's intra-mural Badminton tournament
- Former professional Indian National-level Badminton player
- Joints Sports Secretary at K. J. Somaiya College of Engineer's Students' Council