RUSHI BHAVESH SHAH

+1 (425) 273 4714 | rushi.shah@nyu.edu | 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

Product Engineer - *Tesla, Inc, Palo Alto, CA*   March 2025 - Present
- Spearheading KPI development for V2L(Vehicle-to-load) feature on a the fleet of 100k+ Tesla Model Y and Cybertruck and improving the V2H(Vehicle-to-Home) fleet health improvement by driving the diagnosis with teams
- Defining data signatures that uniquely identify recurring issues, integrating this knowledge into algorithms to quantify field impact and automatically detect future events
- 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
- Providing expert support on escalated issues to minimize system downtime, identifying trending product issues and translating insights into technical documentation, automated diagnostics, and product enhancements

Electrified Powertrain Testing and Validation Engineer - *Stellantis Automobile, Auburn Hills, 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

Robotics Software 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 at 2025 Bay Area Corporate Badminton Championship
- Won 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
- Managing Secretary at New York University's Graduate Indian Student Association
- Former professional Indian National-level Badminton player
- Joints Sports Secretary at K. J. Somaiya College of Engineer's Students' Council