Venkata Seetha Ram Mohan Thota +1 602-516-5892
LinkedIn — Portfolio — GitHub tvsmohan99@gmail.com — Santa Clara, CA

SUMMARY

Robotics Engineer with hands-on experience in ROS2, Python, and C++ for autonomous systems. Skilled in designing and building ROS2 software stacks and integrating complex software–hardware components. Experienced in testing, data collection, and troubleshooting subsystems to ensure high performance, robustness, safety, and reliability. Recognized for rapid learning, strong ownership, independent execution, effective collaboration, and delivering high-quality robotics software in fast-paced environments. Co-author of a paper at IEEE Intelligent Vehicles Symposium (IV) 2026.

WORK EXPERIENCE

PLC Engineer, Hitachi America Ltd. March 2026 – Present
- Developed a control system using Python and WAGO field couplers to automate Fischertechnik devices over MQTT.
- Built a real-time monitoring dashboard using MQTT and Node-RED for system visibility and control.
- Applied Model Context Protocol(MCP) with Gemini agents and A2A orchestration to enhance system efficiency and support quality control processes.

Research Assistant, Battery, Electric and Intelligent Vehicle Lab, ASU June 2024 – December 2025
- Developed traffic scenario simulations in CARLA to validate AUTOWARE planning algorithms
- Integrated a custom vehicle model and custom sensor kit into CARLA-ROS-AUTOWARE bridge pipeline
- Designed a ROS2 C++ node to synchronise data from multiple sensors
- **Publication**: *Real-Time Dynamic Driving Task Assessment in Autoware-Based Simulation Aligned with SAE J3237*, presented at IEEE Intelligent Vehicles Symposium (IV) 2026

Teaching Assistant, OS Architecture, Arizona State University January 2024 – March 2024
- Collaborated and supported students with lab projects, troubleshooting, and scripting using CLI and PowerShell
- Assisted in delivering and grading course content on operating systems, virtualization, and networking

Summer Internship, Indian Institute of Information Technology, Allahabad June 2022 – July 2022
- Object localization using RGB-D cameras and odometry data

PROJECT EXPERIENCE

Formula SAE Vehicle Modeling and Simulation September 2024 – May 2025
- Designing a Formula SAE vehicle in VI-Grade's VI-CarRealTime software

Lane Centering of a Vehicle after Tire Blowout January 2024 – April 2024
- Implemented enhanced tire blowout model and observed effects in Simulink and CarSIM
- Co-simulated a trust-based control technique to safely maintain lane after tire blowout

ROS-OpenCV Optical Flow System on Jetson Nano Mobile Robot January 2024 – April 2024
- Designed Shi-Tomasi corner detector and Lucas-Kanade optical flow to track objects
- Integrated LiDAR (RPLIDAR-A1), camera (Astra Pro RGB-D), NVIDIA Jetson Nano

Palletizing using Universal Robots UR5 Robot August 2023 – December 2023
- Achieved certification in operating UR5 robot and tested straightness and repeatability
- Programmed palletization tasks using teach pendant

Real-Time Implementation of Signal Processing Algorithms January 2023 – April 2023
- Implemented image processing algorithms on STM32F407 in C++ and ARM assembly
- Applied FFT for audio signal processing
- Worked with SPI, I2C, and UART communication protocols

TECHNICAL SKILLS

Programming Languages: Python, C++, MATLAB, Ladder Logic, Assembly Language
Design and Modeling: VI-Grade, CarSIM, SolidWorks, AutoCAD, Fusion 360, RS Logix 5000, TIA Portal
Frameworks: ROS1/ROS2, MCP, Gazebo, CARLA, AUTOWARE, Unreal Engine, Isaac SIM, MuJoCo
Tools: Linux, KiCad, URSim, STM32Cube IDE, VMware, Docker

EDUCATION

Arizona State University January 2023 – December 2024
M.S. Robotics and Autonomous Systems

National Institute of Technology, Andhra Pradesh June 2017 – May 2021
Bachelor of Technology in Electronics and Communications Engineering