VENKATA SEETHA RAM MOHAN THOTA

Phone: +1 602-516-5892 | Linkedin | GitHub | Email : tvsmohan99@gmail.com |

SUMMARY

Robotics engineer holding a master's degree in Robotics and Autonomous Systems from ASU, with a focus on robotics, autonomous systems, control systems, and vehicle dynamics. Highly skilled in Python, MATLAB, and C++. Ready to begin work immediately.

EDUCATION

Arizona State University, M.S., in Robotics and Autonomous Systems **January 2023 - December 2024**
Coursework: Robotics Systems, Principles of System Engineering, Real-Time Digital Signal Processing, Vehicle Dynamics and Control, Multi-Robot Systems, Mathematical Foundation of Machine Learning, Linear System Theory.
National Institute of Technology, Andhra Pradesh **June 2017 - May 2021**
Bachelor of Technology in **Electronics and Communications Engineering**

WORK EXPERIENCE

Volunteer Research Assistant, Battery, Electric and Intelligent Vehicle lab (BELIV), ASU **June 2024 – Present**
Scenario based testing of an Autonomous Vehicle

- 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.
- Acquired knowledge of global safety standards **ISO 26262, ISO 21448, ISO 34502, SAE J3016.**

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 - Present**
Suspension Team, Sun Devil Motorsports - Formula SAE

- Designing a Formula SAE vehicle in **VI-Grade's VI-CarRealTime** software.

Autonomous Tracking and Landing a Drone on a moving platform **January 2024 - April 2024**

- Designed a **Kalman filter** to accurately infer line follower robot's position and velocity from Drone's camera.
- Programmed a Parrot Mambo drone using MATLAB Stateflow for autonomous landing on a line follower.

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 steer a C-class hatchback vehicle to maintain its current lane after a tire blowout event in **CarSIM** and MATLAB.

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 on a mobile robot.

Palletizing using Universal Robots UR5 Robot **August 2023 - December 2023**

- Achieved certification in operating UR5 robot and tested the UR5 robot's **straightness and repeatability**.
- Programmed the UR5 operating the teach pendant to palletization.

Tic-Tac-Toe playing Robot **August 2023 - December 2023**

- Utilized **OpenCV** to accurately detect the player's move position on 3*3 grid.
- Programmed the Robot to choose its next step and place the cube in the chosen position using inverse kinematics.

Real-Time implementation of Signal Processing Algorithms **January 2023 - April 2023**

- Implemented image processing algorithms on STM32F407 in C++ and assembly language (ARM v7).
- Applied Fast Fourier Transform (FFT) to process an audio signal for vowel analysis on STM32F407 Board.
- Gained experience in using communication protocols like SPI, I2C and UART to interface different sensors.

TECHNICAL SKILLS

- Programming Languages : Python, C++, MATLAB, Ladder Logic, Assembly Language
- Design and Modeling : VI-grade, CarSIM, AutoCAD, Fusion 360, RS Logix 5000
- Robotics Frameworks : ROS1/ROS2, Gazebo, CARLA, Autoware, Unreal Engine, Issac SIM, MuJoCo
- Software tools : Linux, KiCad, URSim, STM32Cube IDE, VMware, Docker
- Hardware : Jetson Nano, STM32, 3D printers, Raspberry Pi