VAMSEE KRISHNA KELLA

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EDUCATION

Master of Science, Robotics and Autonomous Systems May 2023
Arizona State University, Tempe, AZ **3.90 GPA**
Bachelor of Technology, Electrical and Electronics Engineering June 2018
Jawaharlal Nehru Technological University, Hyderabad, India **3.80 GPA**

TECHNICAL SKILLS

Programming: C++, Python, MATLAB, SQL, .NET, C, C++
Design and Modeling Tools: ROS, Linux, Git, Gitlab, CARLA, Gazebo, Rviz, Docker, JIRA
Libraries/Frameworks: PyTorch, TensorFlow, OpenCV,CUDA , NumPy
Hardware: Raspberry Pi, Arduino, NVIDIA Jetson Nano, YLiDAR, Intel Realsense Camera, Velodyne LiDAR

WORK EXPERIENCE

Arizona State University, Tempe, AZ: Embedded Software Engineer July 2023 – Present

- Collaborated with a cross-functional team to design an IoT-embedded system, developing an autonomous solution for agricultural farming.
- Developed software in C, and Python, ensuring optimal functionality and efficiency.
- Engaged in review meetings, providing valuable insights into completed work and gathering feedback for continuous improvement.

Accenture, Hyderabad, Telangana: Software Engineer January 2019 - June 2021

- Managed and contributed to the success of 6 GIS applications using Python, SQL, .Net, and agile methodologies, enabling the client to drive revenue by actively participating in tasks such as application development, maintenance, software testing, and updating JIRA.
- Worked on a project to enhance software performance, test automation and scalability for a critical product.

HANDS-ON RESEARCH EXPERIENCE

Personal Lab/Workspace, Hyderabad, Telangana: January 2017 – June 2021

- Established and maintained a personal workspace with Basic Tools, CNC machines, Soldering Station, and power tools.
- Designed and Developed electrical and mechanical components and programmed micro-controllers for real-time systems.
- Developed and implemented A2D Converter, Sensors, Components and programmed micro-controllers for embedded systems.

CVR College of Engineering, Hyderabad, Telangana: Graduate Research Assistant May 2016 - June 2018

- Assisted in a solar electric car project's research, design, fabrication, and testing.
- Created and validated electrical schematics & wiring using industry-standard software/tools.
- Analyzed and documented system requirements, designed and fabricated around 5 electromechanical parts.
- Enhanced Skills in communication protocols such as Ethernet, Serial, RS2, CAN, I2C, UART, SPI, improving testing and validation of electrical & embedded systems.

PROJECTS

***Autonomous Path Following Drone**, (Image Processing, Hardware, MATLAB)* January 2023 – May 2023

- Designed a flight controller algorithm for precise drone navigation.
- Rigorously tested and implemented the algorithm on Parrot Minidrone hardware using Matlab and Simulink.

***3D Object Detection Using Sensor Fusion**, (Computer Vision, Deep Learning, Pytorch)* August 2022 – December 2022

- Successfully trained a deep learning model for 3D object detection, utilizing LiDAR and camera data with Bird's Eye View (BEV) fusion techniques.
- Evaluated and fine-tuned the model's performance on the KITTI dataset.

***Road Following and Obstacle Avoidance**, (Deep Learning, Pytroch, CUDA, TensorRT)* May 2022 – August 2022

- Developed and implemented computer vision algorithms for obstacle detection, enabling the JetBot to navigate safely on road and avoid collisions.
- Utilized machine learning techniques, including convolutional neural networks (CNNs) models AlexNet & ResNet-18, to create a lane detection and tracking system for autonomous road-following.

***Indoor 3D SLAM Using Mobile Robot**, (Darknet, Python, ROS, Hardware)* March 2022 – April 2022

- Engineered a visual SLAM system utilizing mobile robots hardware similar to TurtleBot built on Raspberry Pi, ROS, and equipped with an Intel RealSense D435i camera.
- Conducted camera calibration,implemented computer vision models along with object detection and pose estimation on video frames using Darknet (YOLO v3) & Point cloud library.

ACTIVITIES

***Sun Devil Robotics Club, Arizona State University**,* September 2021 – December 2021

- Contributed as a valuable member of the Arm Team in preparation for the URC Mars Rover competition.
- Collaborated with the team in designing and constructing a 6 Degree of Freedom (DOF) robotic arm specifically for a planetary rover, intended to execute equipment servicing and mission control tasks.