JAGADESWARA PAVAN KUMAR VARMA POTHURI

716-247-3865 | jagadesw@buffalo.edu | linkedin.com/in/pjpkvarma | github.com/pjpkvarma

EDUCATION

Master of Science: Robotics, University at Buffalo, The State University of New York, June 2024
- Coursework: Robotic algorithms, Control Systems, Engineering design Optimization, Computer Vision and Image Processing (CVIP), Machine-Learning, Deep-Learning, Probability.
- GPA: 4.0/4.0.

Bachelor of Technology: Electronics & Communication, GMR Institute of Technology, September 2020
- Coursework: Digital Electronics, Digital Signal Processing, Analog and Digital Communication Systems, Electronic Devices and Circuits.
- GPA: 3.75/4.0.

SKILLS & TOOLS

Languages: Python (NumPy, SciPy, Pandas), Matlab, C++, C, Java, R.
AI Technologies: ML (Scikit-learn), DL (TensorFlow, PyTorch, Keras), NLP (NLTK, SpaCy), CVIP (OpenCV), RL (Gym, Stable-baselines), IRL, Time Series Analysis.
Robotics: ROS, SLAM, Kinematics, Control Systems, Vision for Robotics, Optimization.
Simulation & Modeling: Gazebo, Unreal Engine, Airsim, Simulink.
Hardware: Raspberry Pi, Pixhawk (PX4, QGroundControl).

ACADEMIC PROJECTS

Monocular Vision-based Object Detection and Depth Estimation for Autonomous Vehicles: Python, Pytorch, YOLOv5, OpenCV
- Modified YOLOv5 algorithm for autonomous vehicles to conduct object detection and depth estimation on the KITTI dataset, enhancing both detection and distance estimation capabilities through tailored adjustments using OpenCV and Python.

Stereo Visual Odometry for Robotics: Python, ROS, OpenCV
- Developed a stereo visual odometry system with ORB and FLANN in OpenCV and Python to efficiently estimate robot trajectory by computing the Essential matrix and determining relative pose between frames.

Obstacle Space Navigation: Python, OpenCV, Data Structures and Algorithms
- Implemented path planning algorithms such as A*, Dijkstra, and RRT* using OOP in Python, producing structured code for precise route determination.

RESEARCH PROJECTS AND EXPERIENCE

Imitation Learning for Autonomous Navigation of UAMs and Last-Mile Deliveries: Python, IRL, DL, Airsim, UE
- Developing a novel learning algorithm enabling vehicles to efficiently mimic human navigation, enhancing operational efficiency and safety for both air and ground-based systems. Emphasis is on utilizing advanced simulations for model training/validation and addressing challenges of autonomous navigation in dynamic, real-world scenarios.

WORK EXPERIENCE

Student Assistant, UB Libraries IT Services, Buffalo, NY: August 2023 - Present
- Provided IT support at University Libraries, managing software and hardware installations and troubleshooting across Windows, macOS, and Linux.
- Leveraging TeamViewer and JIRA for remote support and issue tracking to ensure seamless operations for faculty and staff.

Software Developer, TATA Consultancy Services, Hyderabad, India: November 2020 - December 2022
- Led and pioneered development of an advanced recommendation system, harnessing Natural Language Processing (NLP) and Machine Learning, to deliver automated, premium solutions for service tickets.
- Leveraged advanced Time Series Analysis techniques to predict future service ticket trends, enabling precise resource allocation and proactive issue resolution.
- Implemented and supported Single Sign-On (SSO) using Ping Federate, streamlining access management and bolstering security across organization.