Kamala Krishnan

Buffalo, NY
+1(716)-936-4506 kamalakr@buffalo.edu linkedin.com/in/kamala11 github.com/kamalakrishnan kamalakrishnan.github.io

Education

University at Buffalo, The State University of New York **Aug 2022 – Dec 2023**
Master of Science in Robotics & Artificial Intelligence GPA: 3.5/4.0 *Buffalo, New York*
Coursework: Data Structures, Machine Learning, Computer Vision, Deep Learning, Robotics Algorithms, NLP

Anna University **Aug 2015 – Jun 2019**
Bachelor of Engineering in Computer Science & Engineering *Chennai, India*
Coursework: Data Analytics, Operating Systems, Distributed Systems, Computer Networks, Probability

Experience

RadicalX **May 2023 – Aug 2023**
AI/ML Engineer *San Francisco, California*

- Led and coordinated a 3-member team in developing a GPT-3.5 OpenAI API-based chat assistant, achieving 98% intent classification accuracy with an integrated SVM model and enhancing user experience through chat history retention.
- Conducted comparative analysis of Generative AI models, including emerging Large Language Models (LLMs) Llama-2, Koala, and Pinecone to generate highly relevant, grounded responses.
- Collaborated with cross-functional teams to integrate advanced AI algorithms, contributing to the enhancement of existing models and the implementation of an AI Dev Manager.

TTEC Digital, Inc **Jan 2020 – May 2022**
Software Engineer *Chennai, India*

- Developed a customer service tool using Amazon Transcribe for real-time chat transcription and Amazon Comprehend for sentiment analysis, optimizing customer interactions and service quality.
- Participated in development and testing multiple user stories for MunichRE's insurance application, leading to enhanced resilience, a 20% decrease in user-reported issues, and increased positive client feedback.
- Initiated collaborative efforts with Product Managers to implement UI components, execute API changes, and gather user feedback, driving iterative improvements and an enriched user experience.
- Contracted by JP Morgan & Chase to spearhead the implementation and execution of unit testing for the application's initial phase, ensuring rigorous online performance validation with a 95% defect-free rate.

Academic Projects

Computer Vision Projects | *Python, OpenCV*

- **Deep Learning Based Facial Analysis:** Developed a facial analysis system in Python, implementing face detection, recognition, clustering, and emotion/gender/age classification.
- **K-Means Face Clustering:** Implemented face detection modules in OpenCV, achieving 91% accuracy by building a K-Means clustering algorithm from scratch for face clustering.

Robotics Projects | *ROS, Python*

- **Stereo Odometry and Depth Estimation:** Performed stereo odometry computation and visualization by utilizing feature detection, sequential depth estimation, feature extraction, optical flow tracking, and pose estimation techniques.
- **Rapidly-exploring Random Tree for Path Finding:** Developed an optimized pathfinding algorithm based on RRT in Python, generating the shortest feasible path while intelligently avoiding obstacles.
- **PID and Pure Pursuit Algorithm:** Engineered Python and ROS nodes to enable car steering control by integrating PID and Pure Pursuit controllers, while providing visual representation of the trajectory in RVIZ.
- **Evader + Mapper:** Built nodes in a gazebo environment for obstacle avoidance and scanning, saving Cartesian coordinates of scanned obstacles while considering motion.

Machine Learning and Deep Learning Projects | *Python, Sklearn, PyTorch, TensorFlow+Keras, TensorBoard*

- **Driver Drowsiness Detection:** Executed the YOLOv8 model for driver drowsiness detection using a custom annotated dataset, achieving high performance on both training and validation sets (mAP50: 0.995), integrated it into a real-time video processing pipeline for immediate drowsiness detection.
- **Convolutional Neural Network (DTD Dataset):** Trained a variant of VGG16 model from scratch to accurately classify textures in the Describable Textures Dataset, achieving a validation accuracy of 42%.

Technical Skills

Languages: Python, C++, MATLAB, JavaScript
Frameworks & Libraries: Robot Operating System (ROS), TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV, NumPy, Streamlit, Git, Matplotlib
AI/ML Topics: Linear & Logistic Regression, Decision Trees, Random Forests, SVM, k-NN, K-Means, Neural Networks, CNNs, RNNs, Object Detection (YOLO, SSD), Edge Detection, Face Recognition, Image Segmentation, 3D reconstruction, GPU Acceleration