Vijay Koundinya

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EDUCATION

University of Pennsylvania **Philadelphia, Pennsylvania, USA**
MS in Electrical and Systems Engineering *Expected Graduation: June 2023*

R. V. College of Engineering **Bangalore, Karnataka, India**
BE in Electronics and Communication Engineering *Graduation: August 2020*

EXPERIENCE

University of Pennsylvania **Philadelphia, Pennsylvania, USA**
Research Assistant *Dec 2021 - Present*

- Research assistant at mLab under professor Rahul Mangharam.
- Currently working on live-tracking and Localization algorithms for Autonomous F1-tenth cars.
- Building the leader board for the F1/10 autonomous race to be held in IEEE ICRA 2022.
- tech stack: C++, Python, JavaScript, ROS framework.

University of Pennsylvania **Philadelphia, Pennsylvania, USA**
Teaching Assistant *Jan 2022 - Present*

- Teaching Assistant for CIS 515 - Math For Machine Learning.
- High level of proficiency in Matlab, Linear Algebra and optimization.

Cisco Systems **Bangalore, Karnataka, India**
Software Engineer *August 2020 - July 2021*

- Worked in Expressway for the Cluster-n-install team.
- Handled Customer found defects in the DNS and Clustering components of Expressway
- Tech stack: C++, Python, Erlang, Linux,Git,Jira.

Cisco Systems **Bangalore, Karnataka, India**
Software Engineer Intern *January 2020 - June 2020*

- Worked in Expressway for the MRA-Serviceability.
- Built systems to enhance the data collection, and improve data visibility using REST API and collectd.
- Tech stack: C++, Python, PHP Mochi-web Collectd, Linux,Git, Jira.

Continental Automotive **Bangalore, Karnataka, India**
Intern *May 2019 - July 2019*

- Proposed a solution to automatically generate material requests based on the plan for that day and and transfer information more efficiently through the warehouse.

RELAVANT COURSEWORK

- Learning in Robotics,Computational Advanced Numerical Methods,Linear and Non Linear optimization,Machine Learning, Machine Perception,Convex Optimisation, Digital Signal Processing, Linear Algebra, Embedded Systems, Probability and statistics, Data Structures and Algorithms, Database Management systems, Computer Networking.

SKILLS

- Programming Languages: Python, C, C++ ROS, MATLAB, Verilog.
- Familiar libraries: OpenCV,OpenGL ,Numpy, pandas, seaborn, matplotlib, numpy, tensorflow, sklearn.

PROJECTS

Collision avoidance Robot(F1/10) *September 2021-December 2021*

- Implemented on the F1/10 simulator.
- Implemented left-hand-on wall algorithm to avoid path find in the maze.
- Used follow-the-gap and potential-field based strategies to avoid collisions.
- Tech Stack: ROS-melodic, C++, Python.

Speech recognition Using HMM *April 2020 – August 2020*

- Built an Android app to House a speech recongnition model made of HMM and GMM
- Filtering(Forward-backward model) was used for learning and vertibi-decoding.
- Won first place in a hackathon organised by GE Electric.
- Tech Stack: Java, Python, Tensorflow.

Image Compression using SVD *August 2019 - December 2019*

- Implemented SVD in python using shifted power method. This project was conducted under the guidance of DR. H. V. Ravish Aradhya, Professor ECE Department R V College of Engineering.
- A compression ratio of 5 with 90% of the percentage of the information in the image is possible. The Algorithm's complexity is given by $O(m^2n + mn^2 + n^3)$ for a matrix A_{mxn}
- Tech Stack: Python, Numpy, Pandas, sklearn.

Samsung Prism Program, home navigation bot *January 2019- November 2019*

- Implemented Object Identification by retraining YoloV2 using a custom dataset.
- Implemented a SLAM using RPLidar2.
- Tech Stack: ROS-melodic, C++, Python, Tensorflow.

Segregation Silkworm Pupae *April 2018 – December 2018*

- Built an image classifier to aid in the automation of segregation of Silkwork pupae based on gender under the guidance of Dr. M Uttara Kumari, Professor ECE department R V College of Engineering.
- Tech Stack: Rpi,Bash/Shell, C++, Python, Tensorflow.