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Education

Texas A&M University, College Station

08/2021 – 05/2023(Expected)

M.S. in Computer Science (CGPA- 3.8/4)

College Station, TX, USA

Courses: Machine Learning, Robotics, Deep and Reinforcement Learning, Algorithms.

Bhilai Institute of Technology, Durg

08/2010 – 08/2014

B.E. in Electrical and Electronics Engineering (CGPA- 9.26/10.0, Merit)

Durg, CG, India

Experience

Cruise LLC

05/2022 – Present

Intern | BigQuery, Looker Dashboard, Python, Data Analysis and visualization, Autonomous Vehicles. San Francisco, CA, USA

- Provided a functionality to search simulation tests (**80%**) based on **actual AV behavior** as compared to design intent.
- Developed a tool for test coverage analysis, visualizing complex test structure, monitoring test intent & exec. statistics.
- Designed interactive Geo-spatial viz for feature coverage that can improve test efficiency by **50%** with scaling.

Siemens Advanta

05/2017 – 06/2021

Senior Software Engineer | C#, Visual Studio, TFS, SVN, Leadership, Agile Teams, OOPs.

Bengaluru, KA, India

- **Managed a team of 3** to oversee the successful delivery of a pilot version of a desktop and web application.
- Designed and developed a new logical layer on top of exiting framework & increased its efficiency by **35%**.
- Collaborated with 3 agile scrum teams for cross platform testing and reduced production issues by **40%**.
- **Mentored 6 associates** and coached for 6 months duration on technical and domain skills.

Projects

Real time Traffic Light Detection and Classification

Python, TensorFlow, Computer Vision, YOLO, CNNs, OpenCV, Image Segmentation, Darknet, GitHub.

- Built a system to detect traffic lights as small as **20x20 pixels** and classify its state in real time using YOLO.
- Designed a pipeline to segment the traffic light images around the bounding box and fed them to a CNN model to obtain an improved classification accuracy of **91% as opposed to 85%** from YOLOv4.

Machine and Deep Learning Projects

Keras, Matplotlib, LSTM, Transformers, AdaBoost, CIFAR-10, MNIST

- Designed deep learning models for **classification** of extremely noisy MNIST data, **translation** of machine language and next word **prediction** using models like LSTM, transformers etc.
- Implemented and studied performance of AdaBoost with CNNs as base classifiers and single CNN for the case of **multi class imbalanced** dataset.

Study of Meta Reinforcement Learning algorithms on MuJoCu environments

MLSH, MAML, learn2learn, OpenAI Gym, MuJoCu, GitHub.

- Conducted experiments on the performance of meta learning shared hierarchies algorithm against the model agnostic meta learning algorithm on Gym and MuJoCu environments like HalfCheetah, AntDir, Particle2D etc.
- Designed **dynamic goal environments** compatible for significantly different learn2learn and MLSH frameworks.

Web application for RV Park Management

Python, Django, BDD, PostgreSQL, Heroku, MVT, GitHub, HTML.

- Built an end-to-end web application for RV park management using MVT framework and deployed it on heroku.
- Developed online document sign feature by integrating PDF file reader and writer and generator.

Skills

- **Programming Languages:** Python, C#, SQL/BigQuery.
- **Frameworks:** YOLOv4, Django, PyTorch, Transformers, Selenium.
- **Developer Tools:** PyCharm, Jupyter/Colab, VS, GitHub, SQLserver/PostgreSQL/Bigquery, Looker, Jira/TFS.
- **Libraries:** NumPy, Pandas, Keras, TensorFlow, OpenCV, Matplotlib, Folium.

Awards and Recognition

- **Fellowship scholarship award** from CSE department at *Texas A&M University, College Station, TX.*
- **Merit Award** for 8th Rank (EEE discipline). *CSVTU.*
- **Key player award and SPOT award** for providing outstanding contributions in creating TA user stories. *(Siemens).*