SHREEDHAR KODATE

Oakland, CA 94608 — Worcester, MA 01609

✉ nitai.shreedhar@gmail.com 💼 linkedin.com/in/shreedhar-kodate ⊙ github.com/krishnaShreedhar

Education

Worcester Polytechnic Institute	**Aug. 2021 – Present**
Ph.D. in Computer Science (AI/ML)	*Worcester, MA, USA*
Indian Institute of Science	**Aug. 2016 – Dec. 2018**
M.Tech. in Computer Science and Automation, Advisor: Dr Shalabh Bhatnagar	*Bengaluru, KA, India*

Accepted Papers

Intelligent Coordination among Multiple Traffic Intersections Using Multi-Agent Reinforcement Learning (NIPS 2019)	**Dec. 2019**
Advisor: Dr Shalabh Bhatnagar, Paper: https://arxiv.org/abs/1912.03851	*Vancouver, BC, Canada*

Relevant Coursework

Deep Learning, Reinforcement Learning | *Natural Language Processing, Game Theory*

Experience

Quantiphi Inc.	**May 2022 – Present**
*Summer Intern Applied Research - Deep Learning	Python, PyTorch, Graph ML, Google Cloud*	*Marlborough, MA*

- Researching on applying **Graph Machine Learning** algorithms to large Knowledge Graphs for automatic multi-hop Question Generation. Currently conducting literature survey and reviewing feasible methods and frameworks like PyG.

Quantiphi Inc.	**Feb. 2021 – Jul. 2021**
*Senior Machine Learning Engineer	Python, TensorFlow Extended, Google Cloud Platform*	*Bengaluru, KA, India*

- Created a pipeline of OpenCV data augmentation, model-assisted data cleaning and labelling to qualify dataset to train Efficientnet models which improved classification accuracy by **20%** of frequently varying image designs into **500** classes.

Yantriks India Pvt. Ltd.	**Jan. 2019 – Aug. 2020**
Software Engineer Machine Learning| Python, TensorFlow Extended, Google Cloud Platform	*Bengaluru, KA, India*

- Designed and implemented end-to-end ML systems for Global Returns Forecasting, Dynamic Capacity Planning, etc.
- Increased inference performance by **70%** and decrease running cost by **20%** for deployment code by bootstrapping.
- Implemented parameterized code to enable **Neural Architecture Search (NAS)** driven by JSON config.
- **Mentored an intern** for 4 months while implementing EDA and ML data flow pipelines for Anomaly Detection.

Projects

DDPG for Turtlebots Path planning	*Python, Laser data, TensorFlow, GPU*	**Mar. 2022 – May 2022**

- Trained RL agents using **DDPG** algorithm to handle mapless navigation in simple and obstacle filled environments.
- Designed the state space and reward function to help the RL agents learn to take efficient actions and reach goals without any collisions. The solution is scalable, dynamic, and has minimal manual intervention.

OffRoadNet - Path detection for Autonomous Vehicles	*Python, Segmentation, PyTorch*	**Mar. 2022 – May 2022**

- Our motivation for this project was to improve the offroad path detection performance and make it light enough to deploy the trained model on edge devices and fast inference. And thus, progress towards autonomy level 5 in difficult terrains.
- We trained various Deep Learning architectures like PSPHead, ENCHead, with ResNet pretrained backbone. We also finetuned the hyperparameters and also **met the state-of-the-art performance** on the RUGD and Yamaha dataset.

Brain Tumor Radiogenomic Classification using 3D-CNN	*Python, TensorFlow, GPU*	**Oct. 2021 – Dec. 2021**

- Worked on a very important and challenging dataset of brain MRI scans downloaded from a Kaggle competition. We tried a **one-shot atlas** based data augmentation and **ensemble** methods to improve DNA methylation classification.
- Trained 3D CNN and Resnet50 models on 4 different types of brain MRI scan data. Created an ensemble of these models to increase the methylation classification performance by **4%**.

Extracurricular

Inclination towards creative teaching and sharing ideas and inspiration

- Taught and examined Data Science Honors course to **70** undergrad students at DYPCOE, SPPU in Spring 2021.
- Gave a talk on Essence of Linear Algebra in IISc Summer School 2017 to **80** students from across India.