OMKAR RANADIVE

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EDUCATION

Northwestern University **Evanston, Illinois**
Master of Science in Computer Science, CGPA: 4.0/4.0 September 2019 - Present
Coursework: Machine Learning, Statistics, Advanced Deep Learning, Deep Learning Foundations, Data Science Seminar, Statistical Language Modeling, Intro to AI

K.J.Somaiya College of Engineering **Mumbai, India**
Bachelor of Technology in Computer Engineering, CGPA : 8.99/10 August 2015 - May 2019
Coursework: AI, Machine Learning (Topper), Neural Nets, Image Analysis (Topper), Fundamentals of Programming, Data Structures, Algorithms, Operating Systems (Topper)

Certifications: Deep Learning Specialization (Deeplearning.AI), Machine Learning (Stanford, Coursera)

EXPERIENCE

Northwestern University **Evanston, Illinois**
Graduate Research Assistant | Prof. Prem Seetharaman January 2020 - Present
- Working on developing a Reinforcement Learning environment and agents which are capable of audio signal separation.

K.J Somaiya College of Engineering **Mumbai, India**
Deep Learning Intern | Prof. Grishma Sharma January 2018 - April 2018
- Researched k-shot learning methodologies and developed a facial recognition system which can be trained on limited data.
- The system gives 100% accuracy for k=3 and subjects less than 20. For 20-30 subjects and k=3, accuracy ranges from 80 to 90%.

Accelo Innovation **Mumbai, India**
Machine Learning Intern August 2017 - October 2017
- Implemented depth mapping module using Stereo Vision and achieved a 98% accuracy (2 cm error) for objects up to 5m away. Objects 20m away were estimated with 95% accuracy.
- Implemented object detection module with a combination of Haar Cascades, Histogram of Gradients and a CNN model.
- Implemented lane detection module using Inverse Perspective Mapping.

PUBLICATIONS

Simulation Environment for Development and Testing of Autonomous Learning Agents
Karan Joisher, Suhaib Khan, Omkar Ranadive. Presented at ICAST 2019, published in Elsevier-SSRN, April 2019.

k-Shot Learning for Face Recognition
Omkar Ranadive and Dhiti Thakkar. International Journal of Computer Applications 181(18):43-48, September 2018.

PROJECTS

COVID-19 Graph Neural Networks: Created an end-to-end pipeline for analyzing the spread of COVID-19 using Graph Convolution Networks and Message Passing Networks.

Domain Adaptation using CycleGAN: Developed a CycleGAN architecture for generating real-world images from simulated images to reduce the domain gap between real-world data and simulated data.

Citizens Police Data Project: Analyzed the trends after CPDB (Citizens Police Database) went public and compared it with the trends before the release of CPDB using PostgreSQL, Tableau, Trifacta, Graph Frames and Spark.

Context Aware Searching: Created a program which predicts related keywords based on input query using N-Gram Model and a Neural Embedding Network.

Credit Card Fraud Detector: Developed a credit card fraud detector which detects fraudulent transactions using Anomaly Detection.

Movie Recommender and Scraper: Implemented a movie recommender system which forms the database by scraping information from the internet and recommends movies based on past user preferences.

SKILLS

Languages/Web	Python, Java, C, C++, HTML5, CSS3, PHP, Javascript, Angular.JS , Node.JS
Libraries	PyTorch, Tensorflow, OpenCV, OpenAI-gym, Pandas, Numpy, Scikit-learn, Keras, Tflearn, NLTK
Analytics/Tools	PostgreSQL, MySQL, AWS, Docker, Spark, Tableau, Trifacta, Matplotlib, D3.js

ACHIEVEMENTS/ACTIVITIES

- Labs/Reading Groups (Northwestern University): Research in Automated Listening Methods Lab, Modern Artificial General Intelligence Lab, AI Journal Club
- Winner of IEEE Technical Paper Presentation for the paper "Framework for low cost driver-assistance system".
- Second and First Year Representative, Computer Society of India - Conducted 20+ events and seminars.