

OMKAR RANADIVE

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EDUCATION

Northwestern University

Evanston, Illinois

Master of Science in Computer Science, **GPA: 4.0/4.0**

Sep 2019 - Present

Coursework: Machine Learning, Statistics, Advanced Deep Learning, Deep Learning Foundations, Data Science Seminar, Statistical Language Modeling, Intro to AI, Algorithms, Social Network Analytics

Labs/Groups: REALM Lab, MAGICs Lab, AI Journal Club

K.J.Somaiya College of Engineering

Mumbai, India

Bachelor of Technology in Computer Engineering, **GPA: 8.99/10**

Aug 2015 - May 2019

Coursework: AI, Machine Learning (Topper), Neural Nets, Image Analysis (Topper), Fundamentals of Programming, Data Structures, Algorithms, Operating Systems (Topper)

EXPERIENCE

CIERA

Evanston, Illinois

Researcher | Prof. Vicky Kalogera's Group

Jun 2020 - Present

- Compiled and processed the first ever ML benchmark dataset of potentially triggered earthquakes and tremors with 130k+ samples.
- Developed a ML model which uses Wavelet Scattering and Image Convolutions to detect low amplitude earthquake and tremor signals with 90.4% accuracy.

Northwestern University

Evanston, Illinois

Graduate Research Assistant | Prof. Prem Seetharaman

Jan 2020 - Jun 2020

- Developed Otoworld, an interactive environment for training Reinforcement Learning agents for Computer Audition.
- Developed a RL agent with a Monaural Separation Model, Spatial Feature Extractor and a QNetwork to navigate this environment

K.J.Somaiya College of Engineering

Mumbai, India

Research Intern | Prof. Grishma Sharma

Jan 2018 - Apr 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

Aug 2017 - Oct 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 lane detection using Inverse Perspective Mapping and object detection using Haar Cascades, HOG and CNN model.

PUBLICATIONS

O. Ranadive, S. van der Lee, T. Vivian, and C. Kevin, "Applying Machine Learning to Crowd-sourced Data from Earthquake Detectives" in AI for Earth Sciences Workshop, NeurIPS'20.

O. Ranadive, G. Gasser, D. Terpay, and P. Seetharaman, "Otoworld: Towards learning to separate by learning to move" in Self Supervision in Audio and Speech Workshop, ICML'20.

K. Joisher, S. Khan, and O. Ranadive, "Simulation environment for development and testing of autonomous learning agents" in 2nd International Conference on Advances in Science Technology (ICAST'19, Elsevier SSRN).

O. Ranadive and D. Thakkar, "K-shot learning for face recognition," International Journal of Computer Applications 181 (18), pp. 43-48, Sep. 2018.

PROJECTS

LinkedIn Network Analytics: Analyzed changes in network trends in the post-COVID era using network statistics, and studied emergence and evolution of communities using k-core decomposition and community detection algorithms, modeled the network using SIENA and STERGM models.

Analyzing spread of COVID-19 using Graph Neural Networks: Developed an end-to-end pipeline to process COVID-19 data into graph structures and analyze it and predicted future spread using Graph Convolution Network and Message Passing Network.

Domain Adaptation using CycleGAN: Developed a CycleGAN architecture to map simulated images to real-world images to reduce the domain gap between real-world data and virtual environment data

Citizens Police Data Project Analyzed crime trends, officers, and incidents using SQL, Tableau and D3.js, created co-accusal network and identified key officers using graph analytics, applied NLP on reports to find important keywords and assign severity scores.

Other Projects: Credit Card Fraud Detector, Context Aware Searching, Password Cracking and Strengthening Tool.

SKILLS

Languages/Web

Python, Java, C, C++, R, HTML5, CSS3, PHP, Javascript, Angular.js, Node.js

Libraries

PyTorch, Tensorflow, OpenCV, OpenAI-gym, Pandas, Numpy, Scikit-learn, Keras, Tflern, NLTK

Analytics/Tools

PostgreSQL, MySQL, AWS, Git, Docker, Spark, Tableau, Trifacta, Matplotlib, D3.js