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VINAY JAIN

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EMPLOYMENT

Graduate Research Assistant **Rochester Institute of Technology** **May 2020 - Present**

- Improved the accuracy to 99.84% for time series dataset using neuro-evolved Recurrent Memory Cells.
- Developed an algorithm to automate the task of developing a neural architecture, for time series forecasting, image classification, and text models, derived from Reinforcement Learning and Neuro-Evolution.
- Implemented Auto Backpropagation module for Evolving Recurrent Neural Network Graphs.
- Created a module to perform Character-level and Word-level prediction with multi-offset on Neuro-Evolved Directed Acyclic Graphs.
- Technological Stack: C++; MPI; TensorFlow; Matplotlib; Doxygen.

Deep Learning Intern **Universiti Putra Malaysia** **May 2018 - December 2018**

- Developed a Human Activity Recognition System with multi-resident environment with an accuracy of 77.73%.
- Implemented a Decision based Stacked LSTM Neural Network on ARAS dataset.
- Performed Statistical inferences on Human Activity based on the data analysis and predictions.
- Published in International Conference on Paradigms of Computing, Communication and Data Sciences (PCCDS-2020).
- Technological Stack: Python; Keras; TensorFlow; NumPy; Scikit-Learn.

EDUCATION

Rochester, NY **Rochester Institute of Technology** **Fall 2019 – Present**

- M.S. in Data Science (Software Engineering). Having received 55% scholarship.
- Graduate Coursework: Applied Statistics; Software Engineering for Data Science; Neural Networks; Artificial Intelligence; Applied Data Science; Fourier Methods; Image Processing and Computer Vision.

Jaipur, IN **The LNM Institute of Information Technology** **Fall 2015 – May 2019**

- B.Tech. in Computer Science and Engineering.
- Undergraduate Coursework: Advanced Data Structures and Algorithms; Introduction to Enterprise Architecture; Optimization; Object Orientated Programming; Data Mining; Deep Learning.

TECHNICAL PROJECTS

Precipitation Estimation for the State of Rajasthan

- Implemented Data Cleaning and Machine Learning Pipeline for analyzing and predicting precipitation levels for each zone in each district.
- Achieved an accuracy of 72.5% using Regression Analysis and Ensemble methods such as Bagging and Boosting on the data obtained from the Government of Rajasthan.
- Designed and Implemented the choropleth visualization library for exploratory analysis of spatial-temporal data. Using Python; R; MATLAB; Scikit-Learn; Plotly.

Improving Video Object Segmentation by Semantic Frames using BasicNet.

- Developed a BasicNet architecture inspired by SegNet and U-Net for segmenting Objects in video using the semantic information. This helps to track roads and other objects in low light environment while driving.
- Conducted research in Real Time Video Object Segmentation on CamVid dataset and achieved an accuracy of 74.2% using Convolutional Neural Networks and Computer Vision. Using OpenCV; TensorFlow; Keras; Minitab.

Clustering Recipes and Ingredients

- Produced clustering analysis to identify relations between cuisine using its ingredients using K-means, DBSCAN, K-means++ on Yummly Text Dataset. Optimized the text dataset to improve the performance of dataset by integrating Count-Vectorization using TFID, Snow-ball Stemmer, Truncated SVD.
- Developed an outlier analysis module using Local Outlier Factor, Connectivity Based Outlier Factor and performed exploratory analysis by hierarchical clustering using agglomerative algorithms. Using Matplotlib; Python; NLTK.

ADDITIONAL EXPERIENCE AND CERTIFICATIONS

- **Coursera**: Machine learning Engineer; Deep Learning Engineer.
- **Udacity**: Data Engineer.
- **Money Accounting Website**: Designed and Implemented a group expense managing website with features such as chatroom; online payment and personal login account. Deployed on IBM Bluemix with remote connection to cloud database. Using JavaScript; MongoDB; SQL; ExpressJS; NodeJS; Bootstrap; Socket; Strip; HTML/CSS.

Languages and Technologies

- C++; Python; C; MATLAB; SQL; R; Java; JavaScript; MongoDB; JavaScript; Git; TensorFlow; Keras; PyTorch; Linux.