Smeet Dhakecha

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SUMMARY OF QUALIFICATIONS

I have broad experience deploying machine learning models in various domains, and communicating ideas, progress, and results to multi-functional team. I love exploring data, developing predictive modeling methods to deliver the results, and translate the business requirements into actionable results to drive the business forward.

EDUCATION

University of Southern California May 2023
Master of Science in Electrical and Computer Engineering (Emphasis: Machine Learning and Data Science)
Relevant Coursework: Machine Learning, Deep Learning, Intro. to Data Science | GPA: 3.7

Sardar Vallabhbhai National Institute of Technology, Surat May 2021
Bachelor of Technology in Electronics and Communication Engineering

SKILLS AND CERTIFICATIONS

- **Skills** – TensorFlow Keras, Pytorch, NumPy, Pandas, OpenCV, Matplotlib, Scikit-Learn, Data Structures, Image processing
- **Tools** – MS Office, Tableau, IBM QRadar, Jupyter Notebook, LATEX, Apache Spark, Anaconda, GitHub, Linux
- **Languages** – C, C++, Python, Java, SQL, Scala, MATLAB, JavaScript

EXPERIENCE

Institute of Neuroimaging and Informatics, University of Southern California Los Angeles, CA
Student Researcher May 2022-Present

- Deployed the Neuroimaging, and Image Tractography algorithms to the AWS cloud (S3)
- Research on employing the TAU PET tracers for improving the accurate detection of early onset Alzheimer's disease

Research Assistant, ITEMS Institute, University of Southern California Sep 2021-May 2022

- Worked in a team of 5 on segmentation of axon and myelin regions from microscopic nerve excitation data
- Focused on optimizing the U-net based model using Tensorflow-Keras and Pytorch Python framework through hyperparameter optimization; performed architecture search & implement various CNN models
- Improved latency of current systems by 9% by improving the ML solution

Machine Learning Research Intern, National Institute of Technology, Surat Apr 2020-Aug 2020

- Worked in a team of 3 and led primary research to come up with different machine learning models for communication systems
- Utilized dataset consisting of 160K samples for training, performed data analysis, data cleaning and visualization using matplotlib
- Formulated several strategies to revamp existing neural network model for Automatic modulation classification
- Enhanced model accuracy from 85% to 98% and from 79% to 93% for datapoints of different SNR and evaluated model by plotting confusion matrices to analyze classification accuracy of each category yielding 92% F1 score

Deep Learning Research Intern, Indian Institute of Technology, Ropar May 2019-Jul 2019

- Collaborated with a team of 2 to work on 'Demosaicing of RGB and Multispectral images' employing ML techniques
- Improved U-net model to demosaic and refine five-band images by 24% and evaluated model by 6-fold cross-validation method

PROJECTS

Neural Network-based Game AI Project- TensorFlow, Python

- Created an AI opponent for the game of Mini Go using deep reinforcement learning to learn and adapt its gameplay strategy through self-play
- Utilized TensorFlow and Python to train and deploy the model, resulting in improved player engagement and balanced gameplay experiences

Clustering Algorithms – KMeans, KNN, DBSCAN, GMM, Spectral clustering, Python

- Visualized data points with Matplotlib; utilized Principle Component Analysis for Dimensionality reduction & feature selection
- Implemented KNN, K-Means clustering, Gaussian Mixture Models, Hierarchical and Density based spectral clustering algorithms from scratch on several image and text-based datasets using Python
- Used Rand score metric and, Silhouette Analysis to evaluate models, reaching scores up to 0.96

Customer Deposit prediction using Machine Learning – SVM, Random Forest, Naïve bayes, Sklearn, Python

- Implemented Random-forest, Naïve Bayes, and Support Vector Machine models using Sklearn to predict probability of a customer making a deposit with average 94% accuracy on test dataset

Time series prediction using Machine Learning – Time series, Tensorflow, LSTM, Python

- Plotted time series data and extracted seasonality patterns from sunspots to generate dataset for various models
- Used Autoregressive Moving Average model (ARMA), ANN model and LSTM to predict future sunspots