Dhruv Jitendra Limbani

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Education

Columbia University — New York City, US
MS in Computer Science, Machine Learning Track — Expected Dec 2025

SRM Institute of Science and Technology — Chennai, IN
B.Tech in Computer Science and Engineering, GPA: 9.79/10 — Sep 2020 - June 2024

Relevant Coursework

Data Structures and Algorithms, Operating Systems, Computer Networks, Database Management Systems, Machine Learning, Artificial Intelligence

Skills and Interests

Languages: Python, C, C++, SQL
Frameworks: Scikit-Learn, TensorFlow, PyTorch, Keras, OpenCV, NLTK, Streamlit, FastAPI
Developer Tools: Git, Visual Studio Code, Jupyter Notebook, Google Colab, MySQL Workbench
Areas of Interest: Machine Learning, Data Science, Computer Vision, Natural Language Processing, Generative AI

Professional Experience

Samsung R&D Institute — Bangalore, IN
Software Development Intern — May 2023 - July 2023

- Collaborated with the On-Device AI Solutions team to develop an RNN-based deep learning model for predicting user smartphone tasks using monthly smartphone usage data from 10 different apps
- Reconstructed one graph-based approach to log user activity patterns in form of sequential adjacency matrices
- Identified and communicated inefficiency and incompatibility of chosen approach to team, leading to valuable insights and process improvements

Samsung PRISM Research Intern — July 2022 - Feb. 2023

- Partnered on Sensor based Mood Profiling system to detect emotion in real-time and developed two Android WearOS based apps using Java and Android studio for data collection and mood prediction
- Delivered lightweight TFLite model of Multi Layer Perceptron with 93.75% accuracy with an architecture of optimum set of sensors (Accelerometer, Gyroscope, Heart Rate)
- Presented and published the work at 2023 IEEE (CONECCT) and was honoured with Certificate of Excellence

Project Experience

NoCodeML: An End-to-End Platform for Data Analysis and ML Model Building [Website]

- Built a comprehensive platform using Python and Streamlit, enabling users to perform end-to-end data analysis and model building without writing code, tested on over 20 different datasets
- Implemented features for data cleaning, transformation and exploratory data analysis with visualizations
- Facilitated seamless model training/testing and downloading with features for data preparation (train-test split, normalization, encoding) reducing data preparation time by up to 50%

Pediatric Pneumonia Detection from Chest X-ray Images

- Teamed up on developing a CNN model to detect pneumonia from chest X-ray images, achieving an accuracy of 95.97%
- Addressed class imbalance by utilizing a Deep Convolutional Generative Adversarial Network (DCGAN) to generate synthetic images for one class (minority)
- Outperformed a fine-tuned pre-trained VGG16 model by 2% accuracy with CNN model on benchmark dataset

Financial Sentiment Analysis and Categorization

- Carried out a thorough text analysis with NLP techniques such as tokenization, stopword removal, lemmatization, and n-gram extraction to enhance model performance on financial datasets
- Evaluated various models, including three traditional classifiers (Logistic Regression, SVM, Random Forest), DNNs, two RNNs (LSTM, BiLSTM) and transformer architecture (BERT), to identify the best-performing approach
- Achieved up to 90.5% accuracy on test data using Bidirectional LSTM for financial sentiment classification

Academic and Extracurricular Achievements

- Class Topper Award at SRM Institute of Science and Technology
- Performance Based Scholarship for 1st Rank in department at SRM Institute of Science and Technology
- Vice Domain Leader of Machine Learning team at Think Digital Student Club at SRM
- 2nd runner up in BugOut (Debugging Competetion) at Datakon-2022, SRMIST
- SHE scholarship for being in top 1% in Gujarat State Higher Secondary Board Examination