Dhruv Jitendra Limbani

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Education

- **SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu** 2020-Present
  - B.Tech - Computer Science and Engineering with Specialization in Big Data Analytics - CGPA: 9.8 (6 Semesters)
- **Mother of Hope School, Ashadham, Vapi, Gujarat**
  - Gujarat Secondary and Higher Secondary Education Board (Std. 12th) - 78.40% (Ranked **top 1%**) 2020
  - Gujarat Secondary and Higher Secondary Education Board (Std. 10th) - 85.66% 2018

Internship Experience

- **MAGPIE SDE Intern** May 2023 - July 2023
  Samsung R&D Institute Bangalore
  - Assisted in developing user task prediction model with the On-Device AI solutions team using RNN models
  - Identified and communicated the inefficiency and incompatibility of the chosen approach, leading to valuable insights and process improvements during internship
- **Samsung PRISM Research Intern** July 2022 - Feb. 2023
  Samsung R&D Institute Bangalore
  - Worked on Sensor based Mood Profiling to detect emotion in real-time through sensors on Samsung Galaxy Watch
  - Developed two Android WearOS based apps using Java and Android studio for data collection and mood prediction
  - Achieved **93.75%** accuracy for mood prediction with an architecture of optimum set of sensors (Accelerometer, Gyroscope, Heart Rate)
  - Received Certificate of Excellence for the project

Personal Projects

- **ResuMate - Resume Analysis and Course Search Website** July 2023
  - NLP techniques were applied to the resume text dataset using NLTK library and machine learning methods using Python and Scikit-Learn were employed to identify user's target job role
  - Developed a website that provides skill and course recommendations with some suggestions and a score for the resume based on the target job role identified
- **SignAble - LSTM based Sign Language Action Recognition model** Dec. 2022
  - Built sign language action recognition model using Python, OpenCV, Scikit-Learn, TensorFlow, Keras and MediaPipe Holistic and achieved **96.4%** accuracy by implementing computer vision and deep learning techniques
- **Weapon Detection System - A windows application for real-time weapon detection** July 2022
  - A GUI with back-end was developed using PyQt that allows users to create account and choose CCTV for AI enabled weapon detection
  - CV2's Cascade Classifier was integrated with GUI and back-end using Python, OpenCV, Qt Designer, PyQt, sqlite3
- **HR Data Analysis for Employee Churn Prediction** Nov. 2021
  - Performed data analysis and predictive modelling on HR data using Python, Pandas and Seaborn
  - Developed a machine learning model using Scikit-Learn to predict employee churn based on various factors such as department, salary range, promotion in last 5 years, work accidents, time spent in company etc.

Technical Skills and Interests

Programming Languages: Python, C, C++
Developer Tools: Git, VScode, Jupyter Notebook, Android Studio, Google Colab
Frameworks: Scikit-Learn, TensorFlow, Keras, OpenCV, NLTK, Streamlit, Flask, FastAPI
Cloud/Databases: Heroku, Oracle SQL, SQLite
Areas of Interest: Artificial Intelligence, Machine Learning, Deep Learning, Data Science, Computer Vision, Generative AI, Natural Language Processing (NLP)

Research Publications

- **WEARS: Wearable Emotion AI with Real-time Sensor data** July 2022 - Feb. 2023
  DOI: 10.1109/CONECCT57959.2023.10234730
  - Published in: 2023 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)
  - Developed a real-time smartwatch-based emotion prediction system, utilizing a self-created multilingual video dataset as visual stimuli for data collection.
  - Employed machine-learning models and achieved a **93.75%** accuracy in binary classification of pleasant-unpleasant moods by analyzing smartwatch sensor data, including Heart Rate, Accelerometer, and Gyroscope inputs.

- **Enhancing Pediatric Pneumonia Detection through GAN-Based Data Augmentation** July 2023 - Nov. 2023
  Submitted for publication through conference proceedings in IEEE
  - Presented in: 2nd International Conference on Higher Education Institute Challenges Solutions for Sustainable Development Goals 2023 (ICSDG-2023)
  - Introduced a DCGAN based approach (as data augmentation technique) for synthetic x-ray image generation to mitigate data imbalance in pediatric Pneumonia dataset
  - Achieved a notable **95.97%** accuracy using the proposed approach in less than 20 training iterations for regular CNN model outperforming most of the models from current research works

Extracurricular Activities and Achievements

- **Hack-O-Philia (Coding Hackathon)** Mar. 2023
  Conducted by Department of Data Science and Business Systems
  - Contributed in building an AI powered Medical diagnostic System (AIMS) to help people identify diseases at early stage through symptoms
  - Developed a decision tree model for diseases classification and an API for the same

- **Guvi Code Camp, SRM (Student Club)** Dec. 2021 - Aug. 2022
  Technical Team Member Chennai
  - Proposed a web based formal email template generator that can generate email templates based on user requirements and created a website and assisted with back-end development
  - Spearheaded the project and worked on the back-end APIs of the website

- **Think Digital, SRM (Student Club)** Sept. 2021 - July 2022
  Machine Learning Member - Vice Domain Lead Chennai
  - Assisted in design and development of Machine Learning and Deep Learning models for intra club domain projects
  - Worked on Resume Enhancer: a website to help assess the user resume, identify and suggest changes on the resume
  - Developed an API for parsing basic user details like education, experience, skills

- **Bug-Out (Debugging Competition)** Nov. 2022
  DATAKON-2022, SRMIST
  - Secured 3rd position in rapid fire for debugging of various codes in C and C++ programming languages

- **Smart India Hackathon** Mar. 2022
  Conducted by SRM Innovation Incubation and Entrepreneurship Centre
  - Contributed in building a website for physically challenged people to find and apply for the suitable job opportunities around them using web scraping
  - Developed a website scraper for extracting job details for physically challenged people
  - Reached final round of internal shortlisting for university representation at national level

Academic Honors and Awards

- **Performance based Scholarship** 2021-2023
  - Scholarship of **INR 2,00,000** (1st, 2nd & 3rd Year) for holding **1st rank** out of 500 students in the department of Data Science and Business Systems, SRMIST

- **Scholarship for Higher Education(SHE) Scholarship** 2020
  - **INR 80,000** per annum for five years for pursuing Bachelors and Masters level courses in Basic and Natural Science areas granted by Government of India, for being in **top 1%** in Gujarat State Higher Secondary Board Examination