DIVYA NANDLAL SAHETYA
Los Angeles, USA |+1 (650)-231-9239 |sahetya@usc.edu
linkedin.com/in/divya-nandlal-sahetya/ | github.com/Divya-Nandlal-Sahetya | divya-nandlal-sahetya.github.io/

EDUCATION

MS, Electrical and Computer Engineering (Machine Learning and Data Science), **University of Southern California** Los Angeles, USA
Linear Algebra, Probability, Machine Learning, Deep Learning, Algorithms, Cloud Computing **- 3.59 GPA** **August 2021-May 2023**

BE, Electronics and Communication Engineering, Sri Jayachamarajendra College of Engineering Mysore, India
Image Processing, Digital Signal Processing, Data Structures **- 3.54 GPA** **August 2015-May 2019**

PATENTS AND PAPER PUBLICATION

System and method for dynamic translation of speech to Sign Language for Oral Health Education – *IN Patent 201841039995*, *IJRASET*
- Engineered an Automatic Speech Recognition system using CNN for dynamic translation to sign language for oral hygiene education.

System and method for Cleft Speech Training at home – *IN Patent no. 202041045850*
- Devised a machine learning system trained with MFCC features of speech samples for assisting partially speech disordered individuals to improve speech with interactive learning experience.

TECHNICAL SKILLS

- **Programming/Scripting Languages***:* Python, R, Java, C++, C, MATLAB.
- **AI Framework and tools:** PyTorch, Keras**,** Tensorflow**,** PySpark, Pandas, Numpy, OpenAI, LLM, Langchain, HuggingFace, CNN, GANs, RNN, LSTM, Transformers, Object Detection - SSD, RCNN, YOLO.
- **Technologies:** React JS, Flask, REST API, GraphQL.
- **Data Skills:** SQL (MySQL, PostgreSQL), NoSQL (MongoDB), Spark, Kafka, Hadoop, MapReduce, Hive, Tableau, Power BI.
- **DevOps and Documentation tools:** Kubernetes, Docker, Amazon Web Services, GCP, Git, JIRA, Confluence, Jenkins.
- **Domain Knowledge:** Probability & Statistics, Machine Learning, Deep Learning, Natural Language Processing, Software Engineering, Data Engineering, ETL Pipelining, Data Visualization.

WORK EXPERIENCE

Research Assistant Los Angeles, USA
USC - Machine Learning for Medical Images **Jan 2023-Present**
- Proposed Novel Meta-Learning framework for few-shot multi-organ tumor segmentation (***Medical Segmentation Decathlon Challenge***), using dynamically weighted task subsampling and meta-update rules.
- Improved accuracy by 4% over state-of-the-art **Reptile** framework using **Pytorch**.

Research Assistant Los Angeles, USA
USC - Biomedical Imaging Group **May 2022-August 2022**
- Implemented a **deep learning**-based approach to de-noise human and mouse brain **MRI** images using **auto-encoders** in **Keras**.
- Generated a cleaner image compared to traditional image processing approach employed in the **BrainSuite** software.

Software Developer Bangalore, India
Siemens Healthineers **January 2019-July 2021**
- **Log Sanitizer** - Constructed an end-to-end Python executable tool to encrypt Patient Health Information to comply with the **HIPAA** and deployed using **Docker** and **Kubernetes**.
- **Parallel Processing** - Improved the processing speed of the tool to encrypt **~1 million** live log files from different Business units (**B2B** and **B2C**) using multithreading and multiprocessing.
- **Python-Evt** Library Improvements - Enhanced the conversion speed of EVTX and EVT files to XML by multiprocessing in Python-Evtx and Python-Evt libraries.
- **File Transfer Module** - Collaborated with other teams and developed a messaging module in **Java** to interact between two applications namely, the sanitization tool and file transfer tool using **JMS Messaging Module**.
- **Storage Optimization** - Leveraged **Amazon S3 buckets** for efficient and scalable storage of large data volumes, minimizing duplication and optimizing data management during processing.
- **Statistics Plugin** – Designed and implemented a real-time **statistics** plugin to generate performance metrics for the tool, enabling data-driven decision-making. Employed **Power BI** for seamless data visualization and analysis of the generated metrics, enhancing the understanding and interpretation of system performance.

ACADEMIC PROJECTS

Analysis of Supervised and Semi-Supervised Machine Learning for Cervical Cancer Diagnosis | *Github*
- Attained an accuracy of **82.67%** with **Random Forest** with **Supervised Learning** and attained an accuracy of **90.55%** with **Semi Supervised learning** based on ML Learning theory.
- Designed a machine learning system to detect if a person has the risk of cancer based on the risk factors (categorical) data collected from patients and the results of four diagnosis tests namely Hinselmann, Schiller, Cytology, Biopsy.

Predicting Forest Fire in Algeria Using Machine Learning Techniques | *Github*
- Obtained a highest accuracy of **90%** with a Logistic Regression classifier with standardized input and feature reduction using PCA.
- Constructed a comparative machine learning system to predict forest fires using various classifiers on Algeria dataset.

American Sign Language Recognition using Deep Learning Techniques | ***Github***
- Formulated an image recognizer using pre-trained **ResNet** (ResNet18, ResNet34, ResNet50) models in PyTorch.
- Deployed the model on GCP and obtained an accuracy of **96%** - **98%** on the test set and achieved an accuracy of **74%** using ResNet50 on an external dataset.