DIVYA NANDLAL SAHETYA

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

EDUCATION

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

Sri Jayachamarajendra College of Engineering — Mysore, India
Bachelor of Engineering (B.E), Electronics and Communication Engineering — **August 2015-May 2019**
Image Processing, Digital Signal Processing, Data Structures — **3.54 GPA**

TECHNICAL SKILLS

- **Programming Languages & Tools***:* Python (scipy, numpy, scikit-learn, Matplotlib, Pandas, PyTorch, Keras**,** Tensorflow**,** PySpark, OpenAI, HuggingFace), R, Java, C++, C, MATLAB, HTML, CSS, React JS, Flask, REST API, GraphQL, Shell Scripting
- **Data Skills:** SQL (MySQL, PostgreSQL), NoSQL (MongoDB), Spark, Airflow, Kafka, Hadoop, Databricks, Tableau, Power BI
- **DevOps:** Kubernetes, Docker, Amazon Web Services (S3, EC2, SageMaker), GCP, Azure, Git, JIRA, Confluence
- **Domain Knowledge:** Machine Learning (Regression & Classification), Computer Vision (CNN, GANs, RNN, LSTM, Transformers, Object Detection - SSD, RCNN, YOLO), Natural Language Processing (LLM, Langchain), MLOps

WORK EXPERIENCE

University of Southern California, Los Angeles, USA | **Research Assistant** — **Jan 2023-May 2023**

- ***Semantic Segmentation using Meta Learning for Medical Images***: Designed a Meta-Learning framework for few-shot multi-organ tumor segmentation using dynamically weighted task subsampling and meta-update rules. Improved accuracy by **4%** over state-of-the-art **Reptile** framework of OpenAI in **PyTorch**

Biomedical Imaging Group, University of Southern California, Los Angeles, US | Research Assistant — **May 2022-August 2022**

- ***Bias field correction in 3D MRIs using convolutional autoencoders***: Implemented **convolutional auto-encoders** to de-noise human and mouse brain **MRI** images in **Keras**

Siemens Healthineers, Bangalore, India | **Software Developer** — **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**. Implemented **CI/CD** practices using **GitLab** and **Azure DevOps**
  - **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 multi-processing
  - **Python-Evt and Evtx** Library Improvements - Enhanced the conversion speed of the log files to XML format using multiprocessing.
  - **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 tool logs and stats 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 **visualization tools** for seamless data analysis of the generated metrics

Sri Jayachamarajendra College of Engineering, Mysore, India | Research Assistant — **August 2018-May 2019**

- **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 with LPC features 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

ACADEMIC PROJECTS

Analysis of Supervised and Semi-Supervised Machine Learning for Cervical Cancer Diagnosis | *Github*

- Designed a cervical cancer diagnosis detection system using **semi-supervised learning** techniques like **self-training** and attained an accuracy of **90.55%** with **Adaboost classifier**

Medical Chat Bot | *Github*

- Developed a user-friendly medical assistance tool by leveraging extensive research from WebMD and DuckDuckGo search agents, utilizing Langchain to create a prompt that empowers users to access reliable medical information and make informed decisions

American Sign Language Recognition using Deep Learning Techniques | ***Github***

- Formulated an image recognizer using pre-trained **ResNet** model in PyTorch and deployed the model on **GCP.** Obtained an accuracy of **98%** on the test set and achieved an accuracy of **74%** using **ResNet50** on an external dataset