HARSH NITIN THAKKAR

1248 W Adams Blvd, LA, CA, 90007 | (323) 620-6938 | harshtha@usc.edu | LinkedIn | GitHub | Google Scholar

EDUCATION

University of Southern California — Los Angeles, USA
Master of Science — August 2023-Present
- Coursework: - Analysis of Algorithms, Machine Learning

Pune Institute of Computer Technology (University of Pune) — Pune, India
Bachelor of Engineering ML — August 2019-May 2023
Coursework: - Machine Learning, Deep Learning, Artificial Intelligence, Cloud Computing, Database Management, Data Science & Big Data Analytics, Computational Statistics

SKILLS AND LANGUAGES

Programming Languages and Frameworks: Python, R, Java, C++, PyTorch, TensorFlow, Huggingface, Scikit-Learn, HTML, CSS, Javascript, SQL, MongoDB, React, Angular, Django, Flask, Seaborn, Matplotlib, and Streamlit
Tools and Technologies: Jupyter Notebook, RStudio, Tableau, AWS, Google Cloud, Linux, and Git

EXPERIENCE

Association for Socially Applicable Research (ASAR) — Pune, India
Research Intern — October 2022-August 2023
- Collaborated in developing a geodatabase (700,000 + entries) using **R and Python** to assess healthcare accessibility within 30, 60, 120, and 240 minutes by walking and transport modes
- Generated strategic visualizations to enhance accessibility to Primary and Community Healthcare, Covid Testing, and Palliative care Centers across India

JyoSH AI — Pune, India
AI Intern — August 2022-June 2023
- Led the development of an AI-Powered Agricultural Robot's deep learning module for cotton crop health monitoring
- Conducted fine-tuning and comparative analysis of **YOLOv4, YOLOv5, YOLOv7, YOLOv8, and YOLO NAS** models
- Achieved 0.891 mean average precision deploying YOLOv5 on Robot leveraging **Jetson Nano**

Algo Analytics — Pune, India
Cloud Intern — July 2021-December 2021
- Built SaaS for stock price prediction with **AWS**, and **Natural Language Processing**
- Designed an interactive dashboard using **Angular** for insightful visualizations and analysis

PROJECTS

Text-Based Image Retrieval via Low-Resourced Indic Languages (Python, PyTorch, HuggingFace) — November 2023
- Implemented a Siamese network with triplet loss, achieving notable accuracies for English and Hindi models
- Integrated state-of-the-art **MuRIL** for Hindi text embeddings, and **BERT** for English captions, alongside **ResNet50** for image embeddings

Sentiment & Statistical Analysis on 2022 Russo-Ukrainian Conflict (Python, Matplotlib, HuggingFace) [Paper] — August 2022
- Created a custom dataset of 1.5 million tweets spanning over 6 months during the crisis
- Analyzed sentiment trends across languages by fine-tuning **BERT (English f1-score: 0.96) and M-BERT (13 languages f1-score: 0.92)**, aiding in public opinion understanding
- Conducted statistical analysis using hashtag frequency, language distribution, and popularity metrics (likes, replies, retweets)

Potato Leaf Disease Detection using Sequential Models (Python, TensorFlow, Keras) [Paper] — May 2022
- Directed a project identifying key diseases in potato leaves. Implemented and compared **InceptionNet, ResNet50, MobileNet, and CNN** sequential models
- Accomplished **96.12%** accuracy with MobileNet, deploying it for a user-friendly web app for efficient disease detection

Easy Health (Python, TensorFlow, Flask) — November 2021
- Engineered a **CNN**-based web application with a remarkable 96.4% accuracy in detecting COVID-19, Breast Cancer, and Pneumonia from X-ray images