SREYA REDDY CHINTHALA

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EDUCATION

University of Southern California — Los Angeles, CA
Master of Science in Computer Science (GPA: 3.76) — *Aug. 2023 – May 2025*

Christ University — Bangalore, India
Bachelor of Technology in Computer Science and Engineering (GPA: 3.95) — *May 2018 – Jul. 2022*

SKILLS

Languages: Python, C++, Java, SQL, JavaScript, SwiftUI, HTML/CSS
Database and Cloud: MongoDB, PostgreSQL, GCP, AWS (EC2, S3, SageMaker, Lambda)
Tools and Frameworks: ReactJS, NodeJS, Flask, Ajax, JQuery, Bootstrap, Docker, MLFlow, Git, MATLAB
Machine Learning: TensorFlow, Keras, PyTorch, OpenCV, Scikit-Learn, Matplotlib, Numpy, LangChain, HuggingFace

EXPERIENCE

Neuroimaging and Informatics Institute, USC — Los Angeles, CA
Machine Learning Intern — *Mar. 2024 – Jul. 2024*

- Developed **3D U-Nets** in **PyTorch** for white matter hyperintensity segmentation across multi-center FLAIR Brain MRI scans, achieving a dice coefficient of 0.88, (**+20% vs. baseline**)
- Built automated pre-processing pipeline with SPM toolbox for T1 image co-registration and bias field correction
- Applied Frangi vesselness filter with **scikit-image** to segment small vessels, improving vascular structure detection

Vision and Intelligent Systems Lab — Daegu, South Korea
Machine Learning Research Engineer — *Apr. 2022 – Jul. 2023*

- Trained deep learning models for clinical video analysis, benchmarking **2D**, **Time Distributed**, and **3D CNNs** for dysphagia assessment in videofluoroscopic swallowing studies using TensorFlow
- Engineered **ensemble**, **multi-label**, and **multi-modal** systems optimized for accuracy, efficiency, and F1 Score
- Achieved 90.59% peak accuracy using i3D for penetration and aspiration detection, demonstrating superior **temporal feature extraction** capabilities for medical rehabilitation diagnostics [(Research Paper)](#)

Center for High Energy Physics — Daegu, South Korea
Machine Learning Intern — *Jan. 2022 – Mar. 2022*

- Engineered large scale data pipelines for ROOT files from Femtoscopic Bose-Einstein Correlation experiments, delivering optimized and structured datasets that enhanced model accuracy by 18%
- Developed a neural network in PyTorch for photon signal vs. noise discrimination, achieving 93% accuracy

Intelligent Signal Processing Lab — Daegu, South Korea
Machine Learning Research Intern — *Jan. 2021 – Oct. 2021*

- Improved facial emotion recognition accuracy by 3.33% using OpenCV image processing for autonomous vehicles
- Engineered a **pre-processing pipeline** combining Foreground Extraction, Histogram Equalization and automated facial feature detection, enhancing classification performance with the Xception model in **TensorFlow**
- Curated and manually labeled a comprehensive dataset of 8,000+ emotion-specific images from controlled 60-second video sessions to ensure model reliability [(Research Paper)](#)

PROJECTS

Audio-Textual Depression Detection with Multi-modal Transformer | *Python, PyTorch*

- Built a multi-modal Transformer combining BERT **text embeddings** and NetVLAD **audio features**, achieving 75.8% accuracy and 0.81 F1-score on depression detection benchmarks
- Enhanced interpretability through attention weight visualization of linguistic and acoustic cues for **explainable AI**

Infinite Expressions - GAN Driven Facial Expression Augmentation | *Python, PyTorch, OpenCV*

- Developed GAN-based facial expression augmentation framework using First Order Motion Model, trained self-supervised on VoxCeleb dataset with perceptual and equivariance loss for high-fidelity static image animation
- Engineered data preprocessing pipeline with ffprobe integrity checks and MSE-based frame validation to filter corrupted/empty videos from large-scale dataset

AI Research Agent (RAG System) | *Python, LangChain, RESTful API*

- Developed an agentic RAG pipeline leveraging **OpenAI**, **Anthropic**, and **Google GenAI**, with custom prompt templates and **Pydantic** parsers for structured data extraction
- Integrated web search and Wikipedia **tools**, and built a custom tool for automated research report generation