

SREYA REDDY CHINTHALA

213-568-7773 | chinthal@usc.edu | [Google Scholar](#) | [LinkedIn](#) | [GitHub](#)

EDUCATION

University of Southern California

Master of Science in Computer Science (GPA: 3.76)

Los Angeles, CA

Aug. 2023 – May 2025

Christ University

Bachelor of Technology in Computer Science and Engineering (GPA: 3.95)

Bangalore, India

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 Femtosopic 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

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

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**

Automated Receipt Processing System | AWS Lambda, S3, Textract, DynamoDB, Python

- Designed and deployed serverless cloud app to extract, process, and organize receipt data with Textract
- Implemented event-driven automation using AWS Lambda, S3, and DynamoDB for scalable, cost-efficient processing
- Integrated automated email reporting system using AWS SES to deliver processed receipt summaries directly to users

Enhancing LLM Reasoning with Prompting Strategies | Python, PyTorch

- Evaluated advanced prompting methods (Zero-Shot, Zero-Shot CoT, 5-Shot CoT) on GSM8K benchmark and implemented Self-Consistency decoding, achieving a 14% improvement with cost-efficient model optimization
- Built reproducible pipeline with auto prompts, response parsing, and result aggregation for large-scale evaluation

Sentiment Analysis with DistilBERT Finetuning | PyTorch, Scikit-Learn, Hugging Face Transformers

- Finetuned DistilBERT on IMDB dataset for sentiment classification, implementing custom PyTorch Dataset and DataLoader pipelines with tokenization and batching
- Built and trained a classification head with linear, dropout, and softmax layers using AdamW optimizer and cross-entropy loss, achieving strong performance on IMDB and SST-2 benchmarks