SAI MANI KIRAN CHATRATHI

(315) 863-4749 • chatrathisaimanikiran@gmail.com • LinkedIn • GitHub • Portfolio

EDUCATION

Syracuse University, School of Information Studies, Syracuse, NY — May 2025
M.S. | Applied Data Science
Relevant Coursework: Introduction to Data Science Techniques | Statistics | Applied Machine Learning | Deep Learning | Data Mining | Data Analysis | Data Modeling | Natural Language Processing | Big Data Analytics | Data Visualization | Gen AI

EXPERIENCE

Machine Learning Engineer, Asvin Tech, India — January 2022 - May 2023

- Designed and implemented an end-to-end smile correction model using **Pix2Pix GANs** in **PyTorch**, enabling visualization of post-treatment smiles based on 2000+ pre-treatment dental images to assist orthodontic aligner recommendations
- Leveraged **OpenCV** and facial landmark detection to align smile regions with over **95% accuracy**, ensuring pixel-level consistency and enhancing input quality and output sharpness
- Refined a **U-Net-based generator and Patch GAN discriminator** using paired dental images, optimizing **L1 and adversarial loss** to achieve realistic transformation with over **92% SSIM similarity** to actual post-treatment results
- Implemented **data augmentation** and preprocessing steps to account for differences in lighting, angles, and dental alignment, ensuring consistent image quality for model training
- Engaged with clinical advisors to interpret model outputs, communicated technical concepts in accessible terms, and incorporated expert feedback into iterative tuning—ensuring clinically relevant results and fostering collaboration
- Fine-tuned model performance through **20+ structured experiments**, adjusting **learning rates**, **loss functions**, and **input parameters** to ensure high visual fidelity in generated results

Computer Vision Engineer, Zebo, India — April 2020 - December 2021

- Developed a deep learning model using **TensorFlow Keras** and **CNN** architectures to detect and classify facial aging signs such as wrinkles, puffy eyes, and dark spots from static facial images trained on dataset of 5000+ annotated images
- Employed **transfer learning** with pre-trained models (**VGG16**) to boost performance on limited data, achieving over **87% multi-label classification accuracy** across five distinct aging indicators
- Took initiative to create an **annotation pipeline** and **data augmentation strategy** (rotation, brightness, flipping), increasing minority class representation by **40%** and enhancing model generalization across diverse skin tones and lighting conditions

PROJECTS

GHG Emissions Dashboard — March 2025 - May 2025

- Built an interactive **Tableau** dashboard with buttons, filters, and parameters to track Key Performance Indicators (**KPIs)** like annual emissions, sector contributions, and policy targets using over 20 years of publicly available data
- Translated complex GHG data into clear, vibrant visuals with intuitive navigation and tooltips, ensuring accessibility for both technical and non-technical users

Mental Health Detection System — February 2025 - April 2025

- Built and deployed an end-to-end mental health classification system using **Azure Machine Learning**, leveraging **Fast Text** embeddings to analyze social media text and predict conditions like depression and anxiety with **85% accuracy**
- Designed a **real-time inference pipeline** and scalable **online endpoint**, handling everything from training to deployment while ensuring reliable performance on noisy, unstructured input data

Divvy Bike Usage Prediction — September 2024 - November 2024

- Developed a bike demand forecasting model using **Spark** and **Scikit-learn**, applying **Gradient Boosted Trees, Random Forest,** and **Linear Regression**, achieving an **R^2 of 0.735** with GBT on daily usage counts
- Processed and integrated over **470K ride records** with weather and holiday data, engineered temporal and geospatial features, and performed correlation-based feature selection to improve model accuracy and relevance

TECHNICAL SKILLS

Certifications: Azure AI Fundamentals (AI-900), Azure Data Scientist Associate (DP-100), Microsoft Specialist Excel 2019
Programming and Software Development: Python, Data Structures and Algorithms, Git, GitHub
Machine Learning & Artificial Intelligence: Machine Learning, Statistical modeling, Deep Learning, NLP, A/B Testing
Libraries and Frameworks: TensorFlow Keras, PyTorch, SciKit-Learn, Pandas, NumPy, Matplotlib, Apache Spark, Seaborn
Database Management and Statistical Software: DBMS, SQL, NoSQL, Microsoft Excel, Tableau
DevOps and Deployment: Docker, Kubernetes, Azure Machine Learning