**SAI MANI KIRAN CHATRATHI**

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**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 | Natural Language Processing | Big Data Analytics | Data Visualization | Gen AI

**experience**

**Data Scientist,** Nexis, Syracuse University, NY January 2025 - Present

* **Collaborated in a team of four** to develop an **AI-driven system** for analyzing mental health patterns in social media posts
* Developed and trained a classification model to **predict mental health issues** based on user-generated content
* Improved model performance through **hyperparameter tuning**, achieving **85% accuracy**
* Built a scalable, **end-to-end machine learning pipeline** on **Azure**, from **preprocessing to model inference**
* Deployed the model to a **real-time endpoint** using **Azure Machine Learning** for seamless integration

**Data Scientist,** Asvin Tech, India January 2022 - May 2023

* Developed a Deep Learning based model to visualize post-surgery outcomes for smile correction procedures, collaborating with medical professionals and data scientists to align predictions with real-world results
* Built and trained a **U-Net segmentation** model using **TensorFlow** and **Keras**, achieving an **Intersection Over Union (IoU) score of 0.8**, ensuring precise identification of facial regions for smile reconstruction
* Modified a **Generative Adversarial Network (GAN)** using **PyTorch**, integrating progressive training techniques to refine post-surgery smile generation, resulting in an **SSIM score of 0.85** for structural similarity
* Optimized model performance by **fine-tuning loss functions and hyperparameters**, improving **SSIM score to 0.92**, leading to more realistic and high-quality synthetic smile reconstructions

**Computer Vison Engineer**, Zebo, India April 2020 - December 2021

* Annotated 10,000+ facial images using **OpenCV** and **LabelImg** for aging sign detection, ensuring consistency with dermatologist-approved guidelines
* Trained **YOLOv4** using **Darknet** and **OpenCV**, achieving 62% detection accuracy. The result was validated through **mean Average Precision (mAP)** evaluation on a held-out test set
* Applied **data augmentation** using **Albumentations** and **OpenCV** to enhance model precision across different skin tones and lighting conditions
* Reduced false positives by refining **IoU-based filtering**, confidence thresholds, and **non-max suppression** techniques for better detection accuracy
* Integrated **Grad-CAM visualization** in **TensorFlow** and **Matplotlib** to interpret model decisions and improve transparency for dermatologists

**projects**

**Chicago Divvy Bike Usage Prediction** September 2024 - December 2024

* Aggregated and processed Chicago Divvy Bike-sharing data (2022-2024) using **Pandas and SQL**, integrating weather and holiday factors to build a structured dataset for demand forecasting
* Developed and optimized **predictive models in PySpark MLlib**, leveraging **Gradient Boosted Trees** for forecasting and visualized insights through a **Tableau dashboard** for data-driven station planning

**Restaurant Recommendation System** March 2024 - May 2024

* Developed a personalized restaurant recommendation system using the Yelp Dataset, incorporating user preferences, dietary restrictions, budget, and past behavior for tailored recommendations
* Implemented **NLP techniques (TF-IDF, LDA)** to analyze user reviews and optimized **LightGBM** through **hyperparameter tuning**, achieving the best recommendation accuracy

**technical skills**

**Certifications**: Azure AI Fundamentals (AI-900), Azure Data Scientist Associate (DP-100), Microsoft Office Specialist Excel 2019

**Programming and Software Development**: Python, Data Structures and Algorithms, R, SQL, Git, GitHub

**Machine Learning & Artificial Intelligence**: Machine Learning, Statistical modeling, Deep Learning, NLP, A/B Testing, Gen AI

**Libraries and Frameworks:** TensorFlow Keras, PyTorch, SciKit-Learn, Pandas, NumPy, Matplotlib, PySpark, Seaborn

**Database Management and Visualization:** DBMS, SQL, Microsoft Excel, Tableau

**DevOps and Deployment:** Docker, Kubernetes, Azure Machine Learning