Sai Kiran Gopu

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Education

Rochester Institute of Technology **August 2024 – December 2026**

Master's in Data Science *GPA:4.0*

Experience

EFORGE NEXGEN INNOVATIONS **September 2023 – July 2024**

Machine Learning Engineer *Hyderabad, India*

- Engineered and deployed ML pipelines in Python (Pandas, Scikit-learn) for time series forecasting using regression and ARIMA models, delivering actionable environmental predictions and collaborating with cross-functional teams.
- Optimized data ingestion pipelines using SQL and AWS IoT Core to ensure seamless time-series data capture, maintained high predictive accuracy through automated retraining pipelines.
- Applied MLOps practices for deploying forecasting models via AWS Elastic Beanstalk and automated retraining with Docker, performed SQL-based analysis for forecasting and decision support.
- Built Tableau dashboards using Azure SQL and DAX to visualize time-series data trends, supporting actionable insights for decision-making, demonstrated strong analytical skills and attention to detail.

Technical Skills

Languages: Java, Python, C++, R, SAS, Julia, JavaScript, Object Oriented Programming (Python, Java).
Visualization tools & Frameworks: Keras, SciKit-Learn, TensorFlow, Flask, PyTorch, EDA, MS Office, MLOps, Pandas, MLflow, Spark, Kafka, NumPy, matplotlib, seaborn, Airflow, Tableau, Power BI, Gephi, QGIS, R studio.
Databases & Technologies: SQL, MySQL, MongoDB, NoSQL, Docker, Git, AWS, Azure, MS Excel, BigQuery.
ML Algorithms/Techniques: Regression, Classification, Clustering, Recommender Systems, Deep Learning, NLP, CNN, Transfer Learning, Reinforcement Learning, JAX, Time Series Forecasting (ARIMA, SARIMA), spaCy, Transformers.

Projects

JOINT INTENT DETECTION SYSTEM | GitHub

Domain: PyTorch, NLP, LLM, HuggingFace, Transformers, API. **July 2025**

- Developed a scalable BERT-based LLM intent classification system for multilingual conversational AI, incorporating out-of-scope detection to reduce false positives and improve chatbot reliability.
- Constructed end-to-end pipelines for preprocessing and feature extraction with 96.5% accuracy for intent detection.
- Deployed the system as a RESTful API on Heroku for real-time intent detection and slot filling integration.

EV CHARGING STATION DATA ANALYSIS | GitHub

Domain: Python, PostgreSQL + PostGIS, SQL, Tableau, Geospatial Analysis. **May 2025**

- Built a pipeline to clean EV station data, load into a spatial database, and run geospatial SQL analysis on coverage, pricing, and operator performance.
- Developed Tableau dashboards revealing growth trends, rural coverage gaps, and operator market share.
- Identified approximately 99% operational stations, top operators, and common AC pricing bands for strategic planning.

SKIMLIT PROJECT USING NLP | GitHub

Domain: NLP, LSTM, Deep Learning, Transfer Learning. **March 2025**

- Built a hybrid-embedding LSTM NLP model to classify biomedical abstracts into structured segments like objectives, methods, and results sections, reducing literature review time by 33% and improving research productivity.
- Achieved 83% accuracy using Hybrid Embeddings Approach combining token, character, and position-level embeddings
- Leveraged TensorFlow's tf.data API for efficient data pipeline and scalability during model training.

END-TO-END CHICKEN DISEASE CLASSIFICATION | GitHub

Domain: AWS, CI/CD Pipeline, Modular Coding, CNN. **February 2025**

- Built a VGG16-based CNN model using transfer learning to detect poultry diseases with 87% accuracy, demonstrating strong potential for early diagnosis in rural farm settings and improved agricultural health monitoring.
- Optimized data pipelines with DVC for efficient dataset management, deploying via CI/CD pipeline on AWS EC2.
- Integrated Flask web app with Docker and loggers for efficient tracking, deployment, and consistency.

Certifications

- **AWS Certified Cloud Practitioner** - Issued by Amazon Web Services - July 2, 2025.
- **Machine Learning Specialization** - Issued by DeepLearning.AI, Stanford University.

Research Papers

- Co-authored the paper "A Machine Learning Perspective to Foster Accuracy and Prediction of Urbanization using Automatic Weather Station," published in the Scopus-indexed journal Mathematical Statistician and Engineering Applications (Vol. 71, No. 4). Link: Journal