

SAMIKSHA SOMIREDDYGARI

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SUMMARY

Detail-oriented Computer Science Master's student at Rochester Institute of Technology (GPA: 4.0) with a strong foundation in machine learning, cloud computing, and MLOps practices. Experienced in building and deploying ML applications for real-world use cases including facial emotion recognition, airline delay analysis, Sign-Language translation and AI-powered chatbots. Adept at integrating models into scalable systems using Python, AWS, and modern DevOps tools. Passionate about LLM-based generative AI and production-level ML engineering.

EDUCATION

Master of Science in Computer Science - Rochester Institute of Technology | 4.0/4.0

Aug '23 - Dec '25

Bachelor of Technology in Computer Science - Jawaharlal Nehru Technological University

Aug '17 - July '21

EXPERIENCE

System Administrator, Rochester Institute of Technology - part time | ROC, NY

Aug '24 - Present

Skills – Python, MySQL, LAMP

- **Database Management Excellence:** Orchestrated the optimization and schema redesign of MySQL databases, significantly improving data retrieval speeds by 25% and ensuring robust data integrity across academic and administrative functions.
- **Web Development and System Optimization:** Spearheaded a team within the Web Development unit, leveraging the LAMP stack with MySQL, PHP, and JavaScript to enhance and maintain critical web applications, boosting system efficiency by over 30%.
- **Strategic IT Solutions and Content Management:** Achieved a 40% increase in content retrieval efficiency and user interaction through strategic backend enhancements and comprehensive content updates.
- **Leadership and Technical Mentorship:** Cultivated a dynamic learning environment by mentoring over 20 new lab workers, significantly enhancing team productivity and fostering a culture of continuous improvement and technical excellence.

TECHNICAL SKILLS

Languages: Python, R, Java, SQL, PHP, JavaScript, C++, HTML, CSS

Databases: MySQL, PostgreSQL, MongoDB, NoSQL

Frameworks/Tools: Git, Docker, Kubernetes, LAMP, React, TensorFlow, Keras, OpenCV, PyTorch, Hadoop, .NET

Cloud & DevOps: AWS (EC2, S3), Microsoft Azure, GCP, CI/CD Pipelines

ML & Data Science: Scikit-learn, CNNs, NLP, SVD, Feature Engineering, MLOps/LLMOps, Model Deployment

Visualization: Power BI, Tableau, AWS QuickSight

ACADEMIC PROJECTS

Facial Emotion Recognition System

Machine Learning

- Developed a facial emotion recognition system using Python and OpenCV, integrating Convolutional Neural Networks via TensorFlow and Keras on Google Colab to achieve a model accuracy improvement of 35%.
- Engineered and refined a comprehensive data preprocessing and model training pipeline, significantly reducing error rates in real-time emotion detection.

GIT_COCO: Enhanced GIT Model for Vision and Language

Machine Learning

- Led the enhancement of the Generative Image-to-text Transformer model, fine-tuning it on the COCO dataset to generate contextually accurate captions. Achieved a 20% increase in caption relevancy and descriptive precision using Python in PyCharm.
- Coordinated a team effort that resulted in marked improvements in automated image captioning, contributing to a 15% advancement in model performance metrics.

Airline Delay and Cancellation

Big Data Analytics

- Analyzed U.S. flight data from 2016 to 2024, using both relational and document-oriented database models to pinpoint key factors contributing to airline delays and cancellations. Enhanced data integrity and analysis capabilities through complex SQL queries and Python scripting.
- Implemented advanced data cleaning techniques and utilized Tableau for dynamic data visualization, improving data usability by 40%.
- Applied frequent itemset and association rule mining to extract actionable insights, driving a 25% improvement in operational efficiency and delay management strategies.

Sign Language Translator for the Speech Impaired

Machine Learning

- Created a sign language translation application that detects hand gestures and translates them into alphabets, achieving an accuracy rate of 88% with the integration of the InceptionV3 algorithm using Python on Google Colab.
- Played a crucial role in a team that implemented feature vector extraction, enhancing the translation system's responsiveness and reliability for users with speech impairments.

Song Recommendation System

Machine Learning

- Engineered a personalized song recommendation system using Python, which employs Popularity-based, Collaborative Filtering, and Singular Value Decomposition (SVD) models. Enhanced user engagement and satisfaction by tailoring music suggestions, resulting in a 30% increase in user retention.
- Optimized algorithmic efficiency, leading to a 50% reduction in recommendation latency and a 20% improvement in precision of suggested tracks.

LICENSES AND CERTIFICATIONS

- Earned the **Machine Learning A-Z: AI, Python & R + ChatGPT Prize** certificate from Udemy, demonstrating advanced proficiency in Python, R, and AI technologies for effective predictive modeling and data analysis.
- Earned the **IBM Data Analyst Professional Certificate** from Coursera, demonstrating proficiency in a broad range of data analytics skills. Completed rigorous coursework including 'Databases and SQL for Data Science with Python', 'Data Visualization with Python and PowerBI', 'Data Analysis with Python', and advanced Excel techniques for data analysis. Excelled in applying these skills to practical, real-world data challenges, enhancing business decision-making and operational efficiency.
- Participated in **BrickHack**, where we developed the "AI Interviewer" platform using CrewAI to generate personalized interview questions and feedback, enhancing practice opportunities for college students.
- Awarded a Certificate of Appreciation for participating in **TekHack – 24-hour hackathon**, conducted by Smart Bridge in collaboration with IBM. Developed a ChatBot using IBM Watson, showcasing expertise in AI, NLP, and chatbot development.
- Recognized as 3rd Runner-Up in the **Master Orator Championship**, demonstrating strong interpersonal, public speaking, and communication skills.