Rambabu Karravula

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Career Objective

"To secure a challenging position in Data Analyst, Generative AI and Machine Learning, leveraging my expertise in Deep Learning, NLP, and AWS cloud services. Eager to contribute to innovative projects that push the boundaries of AI technology while continuously expanding my skills in developing and deploying cutting-edge ML models and language processing systems."

Education

2022 - 2024 MSC DATA SCIENCE at **GITAM University** (CGPA: 8.2/10.0)
2018 - 2021 Bachelor's Degree at **Sri Harshini UG and PG College** (GPA: 7.5/10.0)

Technical Skills

Domains: Data Science, Artifical Intelligence, Machine Learning, Deep Learning, NLP.
Programming Languages: Python.
Databases: MySQL, MongoDB, Neo4j, Chroma DB
Tools Frameworks: Docker, Terraform, Kubernetes, FastAPI, Visual Studio Code, JupyterLab, Eviews12, Pandas, NumPy, Seaborn, SciPy, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, Keras, Pyspark, PyTorch, Dagshub, MLflow, Langchain, BERT, Vertex AI, OpenAI, LLaMA 2/3, Mistral, RAG, HuggingFace, Streamlit.
Algorithms: CNN, RNN, LSTM, BirLSTM, DT, RF, SVM, LR, SVR.
Cloud: AWS (EC2, S3, Route 53, Lambda, VPC, EMR, Sagemaker, Bed Rock, IAM, CloudWatch, CloudFront.) AZURE(Basics).
Reporting Tools: Power BI, MS Office (Excel/Word/PowerPoint.)
Version Control: Git, GitHub, CI/CD.
Operating Systems: Windows, Linux.
CourseWork: Artificial Intelligence, Machine Learning, Deep Learning, NLP, Time Series Forecasting, SQL, Data Mining, AWS, Inferential statistics, statistics, Probability, Applied Multivariate statistical Analysis.

Internships

AICTE, EduSkills (Remote) Virtual
AWS DATA ANALYTICS VIRTUAL INTERNSHIP (MAY - JULY 2023)

- Acquired hands-on experience working with AWS Cloud services including EC2, S3, Lambda, improving cloud computing and serverless skills.
- Applied data analytics theories to real-world scenarios using AWS tools like Athena, Redshift, QuickSight, and Glue for data ingestion, transformation, and analysis.
- Collaborated remotely on data analytics projects, demonstrating teamwork, communication abilities via AWS shared services.
- Designed and deployed scalable data pipelines on AWS for efficient data ingestion, processing, and analysis using serverless services.

- Proficient in leveraging AWS managed services for building data analytics solutions aligned with business requirements.

AI-ML VIRTUAL INTERNSHIP (SEP - NOV 2023)

- Acquired hands-on experience working with AWS Cloud services like SageMaker, EC2, S3, enhancing proficiency in leveraging cloud technologies for AI/ML model development and deployment.
- Applied theoretical AI/ML knowledge to real-world use cases, reinforcing problem-solving abilities and adaptability in dynamic virtual environments.
- Actively collaborated on AI/ML projects remotely, demonstrating effective communication, teamwork, and contribution towards advancing AI/ML initiatives.

Projects

Malware Classification Using ML and DL Techniques. Code

Developed a sophisticated system leveraging Machine Learning (ML) and Deep Learning (DL) algorithms to detect and mitigate advanced malware threats. Various ML algorithms such as **random forest, support vector machines (SVM)** were used for feature extraction and classification. Implemented deep learning models including **convolutional neural networks (CNN) and recurrent neural networks (RNNs)** to analyze malware behavior patterns and identify potential threats.

Machine learning for telecom customer churn prediction. Code

I employed state-of-the-art machine learning algorithms like **Logistic Regression, Decision Tree, Random Forest, and Gradient Boosting** to train and optimize multiple models for accurately classifying customers as potential churners or non-churners. **Extensive hyper-parameter tuning, cross-validation** techniques, and ensemble methods were employed to enhance model performance and generalization. The best-performing model achieved an impressive **accuracy of 85 and an F1-score of 0.82** on the test set..

Movie Recommender System with Heroku Deployment. Code

Developed a content-based movie recommender system using the TMDB dataset. Leveraged Python libraries such as Pandas for data manipulation, **Scikit-Learn for machine learning algorithms, and Natural Language Toolkit (NLTK) for text processing. Employed Term Frequency-Inverse Document Frequency (TF-IDF)** and cosine similarity to calculate the similarity between movie descriptions. **Deployed the application on Heroku**, ensuring scalable and reliable access to the recommendation system.

Hybrid RAG Chatbot Systems: Merging Open Source and Paid LLMs Code

This project explores the integration of **open source and paid large language models (LLMs) within Retrieval-Augmented Generation (RAG)** pipelines for processing **PDF documents and powering conversational chatbots**. By comparing performance metrics and developing a hybrid system, the project aims to optimize accuracy, response time, and cost-effectiveness in diverse applications..

Certifications

(Coursera)Google Advanced Data Analytics Professional Certificate.
(Coursera)Machine Learning on Google Cloud Specialization.
(Coursera)Statistics with Python Specialization.
(Coursera)Generative AI Automation Specialization.