Preetham Reddy Vinnamala

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PROFESSIONAL EXPERIENCE

Indiana University, Bloomington, USA

UITS Technical Consultant   August 2023 – Present
- Provide technical support in UITS Consulting Services Mission areas, aiding clients in desktop/mobile computing, increasing client satisfaction scores by 18%

Inventory Analyst   January 2023 – May 2024
- Enhanced inventory accuracy through advanced data analytics to 94 % and increased the binning percentage to 83%

Mu Sigma Business Solutions Pvt Ltd, Bangalore, IN

Apprentice Leader- **Research & Development**   June 2022 – July 2022
- Orchestrated the final stages of a hyper-automation and predictive maintenance project, cutting unplanned maintenance events by 60% and boosting production output by 25%

Data Scientist - **Research & Development**   May 2019 – May 2022
- Refined the pair trading application's efficiency through algorithmic adjustments, enhancing the profit margin by 8%
- Spearheaded AI chatbot development, later integrated into company software, driving 3% revenue growth
- Engineered a robust health analytics platform through advanced EDA and Sentiment Analysis shiny application; reduced data processing time by nearly 50% and boosted user satisfaction by 35%
- Designed and deployed two automated reporting solutions utilizing diverse data sources, improving leadership's understanding of individual, process, and platform metrics; saved 30 hours per month on manual data analysis
- Developed a state-of-the-art video analytics tool (unstructured data) leveraging YOLOv5, achieving 35% improvement in real-time crowd tracking and density mapping, optimizing crowd control strategies for large-scale events
- Established and maintained Ethereum full node infrastructure to analyze NFT data; improved data accuracy by 40% and reduced operational costs by 12% through efficient resource management
- Championed the development of a predictive maintenance and hyper-automation application, cutting equipment failure rates by 30% and enhancing system reliability for clients by 45%

PROJECTS

i. Increased MRI image segmentation accuracy by 24%, using CNN(Convolutional Neural Networks) over KNN, utilizing Python and MATLAB
ii. Improved air quality forecasting using a stacked bidirectional LSTM, outperforming VAR and SARIMAX and achieving the lowest RMSE on a UCI multi-variate time series dataset with hyperparameter tuning in Python
iii. Achieved 95% accuracy in chest cancer classification using a CNN, implemented end-to-end with Python, leveraging MLflow, DVC, and AWS EC2 for model management and deployment (MLOps)
iv. Conducted dedicated research on contextual generative AI (Artificial Intelligence) models, such as OpenAI's GPT-3.5, for high-quality and contextually relevant text generation
v. Explored and understood key machine learning architectures like GANs, Transformers, and RAG to create a Streamlit application for Image generation and contextualized text generation
vi. Engineered a cloud-based GCP and Looker Studio project analyzing global song likability factors using top music datasets
vii. Comparative study of Recommender Systems using GNNs, including models like LightGCL, SimGCL, and XSimGCL

SKILLS

Core Competencies: Data Scientist, Generative AI Engineer, ML Engineer, Data Analyst, Solution and experiment designer

Programming Languages: R, Python, SQL, MATLAB, SAS, Shell Scripting

Databases: Mongo DB, Neo4j, MySQL, Postgres, Elasticsearch, Hive, BigQuery, Alfresco

Tools and IDE: Eclipse, Git, Tableau, Power BI, Shiny R, Looker Studio, VS Code

Technologies: Docker, Kubernetes, Linux, RESTful APIs, CI/CD, Spark, Data Structures, TensorFlow, PyTorch, GCP (Cloud), Deep Learning,NLP, Pandas, LLM, MLflow, DVC, AWS EC2(Cloud), GANs, RAG, MLOps, A/B Testing.

ACHIEVEMENTS & CERTIFICATIONS

- Garnered 3 Spot Awards for exceptional dedication and innovation, leading to the successful execution of critical projects
- OCI Generative AI Professional - Certification

EDUCATION

Indiana University, Bloomington, IN, United States
Master of Science in Data Science/ AI, Advanced Database Concepts, Statistics.

National Institute of Technology, Raipur, Chhattisgarh, India
Bachelor of Technology in Electronics and Telecommunication Engineering (**Honors**)