Jashia Mitayeegiri

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EDUCATION

University of North Texas - *Masters in Artificial Intelligence (Machine Learning Concentration)* **Aug 2022 – May 2024**
Coursework: Deep Learning, Natural Language Processing, Big Data, Generative AI, Prompt Engineering, LLMs *GPA: 4.0/4.0*

Jawaharlal Nehru Technological University - *Master of Technology in Computer Science* **Aug 2021 – Aug 2022**
Coursework:Data Analytics, Data Science, High-Performance Computing, Parallel Computing, Business Analytics *GPA: 9.40/10.0*

Jawaharlal Nehru Technological University - *Bachelor of Technology in Computer Science* **Aug 2017 – Aug 2021**
Coursework: Data Warehousing and Data Mining, Grid and Cloud Computing, Design & Analysis of Algorithms *GPA: 8.22/10.0*

SKILLS

Programming Languages: Python, Java, C, C++, MATLAB, SQL
Big Data & Cloud Tools: Kafka, Hadoop, MongoDB, Zookeeper, MySQL, Azure, AWS, GCP
ML/AI Tools: TensorFlow, PyTorch, JAX, PySpark, LangChain, SciPy, Matplotlib, NumPy, Pandas, Langsmith, Tableau, Power BI, LangGraph
Web Technologies: HTML, Servlets, JSP, CSS, XML, JSON, JavaScript, Django, Streamlit
Container/Workflow Tools: Docker, Git, MLflow, MLOps, CUDA

PROJECTS

Radio Map Estimation with Deep Progressive Network (DPN-RME)
- Developed a DPN for radio map estimation, achieving a 5.5% reduction in RMSE (from 1.64 to 1.55), improving UAV navigation and localization systems.
- Processed multi-dimensional radio signal data for urban and rural environments, enabling real-time radio strength predictions for complex terrains.
- Conducted statistical analysis (e.g., hypothesis testing, regression) to validate model performance, ensuring robustness across diverse environments.
- Enhanced UAV navigation systems, reducing operational costs by 10% and improving mission success rates by 15%.

Real-Time Youtube Data Analytics Using Apache Kafka Streams and AWS
- Built a scalable end-to-end pipeline (Kafka, PySpark, DynamoDB) to process 1M+ video records daily, reducing data latency by 40%.
- Boosted click-through rates by 20% via A/B testing on thumbnails/titles and regression-based viewer behavior analysis.
- Designed interactive Tableau dashboards to visualize trending video categories, watch time, and audience demographics, empowering business teams.

Autonomous Threat Detection System using LangGraph and MCP
- Engineered a multi-agent cybersecurity framework (LangGraph + LLMs) for threat detection and IOC extraction from SIEM logs.
- Standardized inter-agent workflows with Model Context Protocol; enriched alerts using MITRE ATT&CK and OSINT, achieving 92% detection precision.
- Optimized for low-latency (1.5s) and high availability (99.9%), enabling production-scale security deployment and real-time visualization of threat patterns.

Neo4j-Powered Drug Interaction Knowledge Graph for Clinical Decision Support
- Developed a graph-based AI system using Neo4j to analyze over 50,000 patient-drug-disease interactions, enabling data-driven identification of optimal multi-drug combinations with improved patient compatibility.Engineered custom Cypher queries to trace drug synergy paths and detect adverse interactions, improving drug recommendation accuracy by 27% compared to traditional rule-based systems.
- Leveraged graph algorithms (e.g., PageRank, community detection) to uncover hidden drug relationships and influence pathways in high-dimensional clinical datasets. Delivered scalable, interpretable results to healthcare teams, showcasing a robust use of graph ML and domain-specific AI for precision medicine.

Optimization of Ride-Sharing Application with Reinforcement Learning
- Modeled ride-sharing operations with Markov Decision Processes and Value Iteration, reducing trip time by 12% and increasing driver productivity by 15%.
- Used A/B testing and time series analysis to improve rider satisfaction by 20% and optimize driver allocation, boosting revenue by 18%.
- Designed Tableau dashboards to visualize key metrics such as driver earnings, rider wait times, and route efficiency, enabling the operations team to make data-driven decisions.

EXPERIENCE

Software Engineer – Sunus LLC (Client: Kenvue) **June 2025 – Present**
- Optimized a lightweight RoBERTa for intent classification and NER using LoRA for fine-tuning, achieving 98.4% intent accuracy and 96.2% slot F1-score, with inference latency under 100 ms on CPU. Monitored GPU usage for cost efficiency using AWS CloudWatch and implemented a script to automate text annotation and preprocessing.

AI Research Engineer - University of North Texas **June 2024 – May 2025**
- Developed a Deep U-Net with Scaled Transformers for wireless source localization, reducing RMSE by 28% over baseline models at low sampling rates. Enhanced global context using 12 transformer blocks and cross-attention, leading to improved performance over previous state-of-the-art models. Improved generalization in dynamic environments by integrating skip connections and transformer-processed features for robust spatial predictions, utilizing tools like PySpark and GCP.

Machine Learning Engineer – Predictive Data Solutions **July 2021 – Jan 2022**
- Created software to quantify topic similarities and dependencies using NMF topic modeling, Word Embedding, Sentence Transformers, DBSCAN, and tSNE, which improved the accuracy and efficiency of data analysis processes during an internship at Predictive Data Solutions.

Artificial Intelligence Engineer - Indian Space Research Organization(ISRO) **May 2021 – July 2021**
- Developed three chatbots for humanoid speech technologies using context, TF-IDF, and Word2Vec, achieving 94% accuracy and reducing response time from 0.10 sec to 0.04 sec. Enhanced the Word2Vec chatbot with entity and intent extraction and abbreviation handling

PUBLICATIONS AND ACADEMIC RESEARCH

- **J. Mitayeegiri, S. Dong, C. Qiu, Q. Yang, X. Li, Y. Huang, and H. Fan,** *"Radio Map Estimation with Deep Progressive Network",* in 2024 IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR), Aug 2024. DOI: 10.1109/MIPR62202.2024.00038
- **J. Mitayeegiri, M. Athikam, R. Mounika, S. Reddy, D. Yagnapriya,** *"Optimized Retrieval-Based Chatbot Generator,"* Bachelor's Thesis, Aug 2021. DOI: 10.13140/RG.2.2.11614.96323
- **J. Mitayeegiri, D. Yagnapriya** *"Topic Modeling with Latent Semantic Analysis and Latent Dirichlet Allocation,"* Bachelor's Thesis, Jan 2020. Advisor: Dr. M. Chandra Mohan. DOI: 10.13140/RG.2.2.30908.76166
- **J. Mitayeegiri,** *"Transfer Learning for Recognising Faces in Disguise,"* Master's Thesis, July 2022. Advisor: Dr. V. Kamakshi Prasad. DOI: 10.13140/RG.2.2.24197.87521