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, R, react

Big Data & Cloud Tools: Kafka, Hadoop, MongoDB, Zookeeper, MySQL, Azure, AWS, GCP, Databricks

ML/AI Tools: NLTK, TensorFlow, PyTorch, JAX, PySpark, LangChain, TGI, SciPy, Matplotlib, NumPy, Pandas, Langsmith, Tableau, Power BI

Web Technologies: HTML, Servlets, JSP, CSS, XML, JSON, JavaScript, Django, Streamlit

Container/Workflow Tools: Docker, Jenkins, Kubernetes, 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 data pipeline to analyze YouTube video trends in real-time, processing over 1 million video metadata entries daily, enabling data-driven decision-making for content creators and marketers. Integrated Kafka Streams, PySpark, and AWS DynamoDB for streaming analytics, reducing data processing latency by 40% and enabling real-time insights.
- Conducted A/B testing on video thumbnails and titles to identify optimal engagement strategies, resulting in a 20% increase in click-through rates (CTR) for top-performing videos.Used statistical analysis (e.g., hypothesis testing, regression) to identify key factors driving video popularity, leading to a 15% increase in viewer retention for targeted content.
- Designed interactive Tableau dashboards to visualize trending video categories, watch time, and audience demographics, empowering business teams.

Research Companion Using Gemini Pro and SERP API

- Developed a UI to process unstructured text data from research papers, reducing literature review time by 5% for academic and industry researchers.
- Utilized LangChain agents, RAG with chain of thoughts, and SERP API for knowledge retrieval, achieving 95% accuracy in query responses.
- Conducted statistical significance testing to validate the effectiveness of BERT-based response comparison, reducing hallucinations in LLMs by 30%.
- Created interactive visualizations to help researchers identify key trends and gaps in literature, improving the quality of academic and industry projects.
- Enabled faster decision-making by providing actionable insights, leading to a 25% reduction in project timelines for research teams.

Image Caption Generator and Comparator Using Transfromers and Word2Vec

- Designed an advanced model to generate image captions and measure similarity, improving product search and recommendations for an e-commerce platform. Processed image datasets and vectorized captions using Word2Vec embeddings, achieving BLEU scores of 0.85, and an average similarity score of 0.87.
- Conducted A/B testing on product recommendation algorithms, resulting in a 12% increase in conversion rates for recommended products.Applied statistical analysis (e.g., correlation analysis, regression) to identify key factors influencing customer engagement, leading to a 10% increase in average order value.
- Built interactive dashboards using Power BI to visualize product search trends, customer preferences, and recommendation performance, enabling the marketing team to optimize campaigns.

Optimization of Ride-Sharing Application with Reinforcement Learning

- Developed a optimize ride-sharing operations using Reinforcement Learning, resulting in a 15% increase in driver productivity and a 10% reduction in rider wait time. Modeled ride paths using a Markov Decision Process and implemented Value Iteration for optimization, reducing average trip duration by 12%.
- Conducted A/B testing on route recommendation algorithms, leading to a 20% improvement in rider satisfaction scores. Applied statistical analysis (e.g., time series analysis, regression) to predict demand patterns, optimizing driver allocation and increasing overall platform 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**
- Building an agentic AI chatbot for a secure transfer application using LLM orchestration and prompt engineering.
- Integrated secure communication flows and user intent mapping to reduce manual intervention by 40%, improving response accuracy and compliance.

AI Research Assistant - 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 via 12 transformer blocks and cross-attention, delivering over 2× improvement compared to previous SOTA. Improved generalization in dynamic environments by fusing skip connections and transformer-processed features for robust spatial predictions.

Machine Learning Engineer – Predictive Data Solutions **July 2021 – Jan 2022**
- Worked on producing software facilitating decisive business decisions by quantifying topic similarities and dependencies using NMF topic modeling, Word Embedding, Sentence Transformers, DBSCAN, and tSNE during an internship at Predictive Data Solutions.

Artificial Intelligence Intern - Indian Space Research Organization(ISRO) **May 2021 – July 2021**
- Developed three chatbots for humanoid speech technologies based on context, TF-IDF, and Word2Vec. Word2vec chatbot with a 94% accuracy and accelerated response time from 0.10 sec to 0.04 sec. Revitalized it with entity and intent extraction and abbreviations.

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