HALEEMAH T. AMISU

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Education

Master of Science in Computer Science - Towson University *August 2024 - Expected May, 2026*

Relevant Coursework: *Data Mining, Big Data Analytics, Artificial Intelligence, Operating Systems, Database Management.*

Bachelor of Science in Computer Science - Alcorn State University

Skills

Languages and Programming: Python, Java, C++, HTML/CSS, JavaScript

ML & NLP Tools: pandas, NumPy, scikit-learn, Hugging Face Transformers, PyTorch

Frameworks & Platforms: Flask, MySQL, Git, REST APIs, AWS (Lambda, RDS, SES)

Concepts: Retrieval-Augmented Generation (RAG), Graph-Structured Retrieval, Prompt Engineering, Statistical Modeling, Time-Series Forecasting, Clustering, Regression

Projects & Research

***Enhancing LLM Reasoning with Dynamic Knowledge Graph Retrieval* - Capstone Project** *July 2025 - Ongoing*

- Designed a research framework to improve LLM factual accuracy and reasoning by dynamically constructing query-specific knowledge graphs from unstructured dataset.
- Outlined methodology to integrate graph-based retrieval into LLM prompts, grounding outputs in verifiable facts to reduce hallucinations in high-stakes domains (e.g., medical decision support, personal knowledge assistants).
- Planned evaluation pipeline comparing baseline LLMs vs. graph-enhanced prompting across multiple domains (medical, personal knowledge management).
- Leveraging Python, NetworkX, spaCy, Hugging Face APIs for graph construction, retrieval, and LLM integration.

Ranking with Purpose (RWP) *May 2025 - Aug 2025*

- Processed and analyzed IPEDS datasets from 500+ U.S. public universities using Python (pandas, NumPy), preparing institutional data for comparison.
- Applied percentile scoring and correlation analysis to identify patterns between funding levels and student outcomes that traditional prestige rankings overlook.
- Deployed a Streamlit web app with interactive visualizations, enabling users to generate and explore custom rankings in real time.

***Fabric Inventory Forecasting System* (FIMS)** *Feb 2025 - May 2025*

- Built an end-to-end demand forecasting platform for small retailers by generating synthetic sales datasets from Google Trends patterns to simulate 12 months of retail behavior.
- Implemented and evaluated forecasting methods including Prophet, SARIMA, regression, and Hugging Face NLP models, achieving a 12% reduction in RMSE compared to baselines.
- Deployed a production-ready backend on AWS Lambda and RDS, integrating APIs for scalable access and demonstrating real-world applicability in inventory decision-making.

Experience

Towson University

Graduate Assistant Immersive Learning and Innovation Lab *June 2025 - Present*

- Piloted VR/AR learning applications with 15+ faculty, converting qualitative use cases into structured requirements that shaped vendor product roadmaps.
- Redesigned sync workflows and troubleshooting playbooks for 200+ students, increasing session reliability by 30%.
- Led usability studies with 60+ participants, translating feedback into feature priorities such as streamlined onboarding and analytics dashboards.
- Executed a case study on AI-powered feedback in VirtualSpeech, defining evaluation metrics and study logistics to measure improvements in confidence, clarity, and delivery for students.

Experis (Contracted by Meta)

Data Quality Analyst *Nov 2021 - Aug 2024*

- Validated large-scale AR/VR datasets (1,000+ participants), ensuring reliability of facial/eye-tracking inputs for ML model training.
- Improved research throughput by 20% through coordinator performance analysis, boosting relevant data yield.
- Expanded testing capacity by 33% by launching a new research site, setting up technical infrastructure, and training coordinators.