Abdul Aziz

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Education

M.S Artificial Intelligence | Indiana Wesleyan University | May 2025- current | GPA: 4.0/4/0

B.S. Computer Science & B.A. Business Economics | Beloit College'22 - Beloit, WI | Presidential Scholar Receipt|

Relevant Coursework: Large Language Model, Natural Language Processing, Big Data, Database Capstone, Machine Learning, Software Engineering Capstone, Threads & Operating System, Senior Thesis (Economics), Accounting & Finance, Business Management, Game Theory, Discrete Mathematics, Linear Algebra

Professional Experience

Senior Analyst, Software/AI Engineer | Northern Trust, Chicago, IL | 08/2024 – Present

- Accelerated decision-making by 40% by pioneering a scalable Retrieval-Augmented Generation (RAG) framework, integrating internal knowledge bases to deliver faster, contextually rich insights.
- Developed Graph RAG pipelines with Neo4j and knowledge graphs, boosting contextual accuracy of GenAI outputs by 30% and enabling explainable AI recommendations.
- Engineered and deployed multi-tenant Guardrails-as-a-Service on AKS with Argo pipelines, ensuring 100% compliance with Responsible AI policies by monitoring all OpenAI interactions, blocking jailbreaks, and preventing harmful outputs in production.
- Configured and scaled Arize Phoenix observability in a multi-tenant environment, enabling real-time traceability and error detection for LLM workflows, reducing debugging cycles by 35%.
- Built a Ground Truth-as-a-Service (GTaaS) platform to evaluate and benchmark LLM outputs, creating a feedback loop that increased RAG response reliability by 25%.
- Automated prompt tuning for document QA workflows with DSPy, achieving a 20% lift in relevance scores and enhancing retrieval quality for enterprise users.

Associate Software Engineer | Northern Trust, Chicago, IL | 07/2022 – 08/2024

Data Science / Machine Learning:

- Delivered a LightGBM-powered news recommendation engine deployed on Azure ML pipelines, automating classification and reducing manual tagging by 40%, boosting the BD team's response speed.
- Created a GPT-4-driven briefing generator chatbot, integrating financial datasets and retrieval mechanisms to generate accurate, automated executive summaries, cutting reporting time by 50%.
- Automated insight generation workflows with OpenAI models, standardizing executive briefings and driving a 25% increase in analyst productivity.
- Optimized high-volume SQL pipelines, reducing data processing time by 20%, improving operational efficiency across the analytics ecosystem.
- Engineered a Graph Neural Network-based client acquisition engine, increasing high-value lead conversions by 15% and enabling better strategic targeting by relationship managers.

Data Engineering:

- Led a two-person team in the cloud migration of legacy Oracle systems to Databricks, modernizing infrastructure and enabling scalable analytics across enterprise datasets.
- Designed and deployed a production-grade Neo4j graph database, integrating a custom entity resolution algorithm that cut data redundancy by 35% and improved client similarity detection accuracy.

Strategy & Development Intern | American Family Enterprise, Madison, WI   08/2021 – 01/2022

- Defined data strategy roadmap for collection and analysis of demographic data through the enterprise to increase diversity and inclusivity.
- Leveraged research data, and trends by analyzing the demographic data to endorse the Inclusive Excellence leadership team in the development of
- the comprehensive strategy, increasing diversity in the company by 18% using Python's statistical analysis tools.
- Designed and administered a strategic plan for 2022 on Jira Software, improving coordination while strategic planning.
- Created and monitored an interactive website on SharePoint, increasing web traffic by 50%.

- Analyzed 3 different management tools(Monday.com, Microsoft Access, and Jira), recommending the best to be used for the development of their strategic plan for 2022.

Capture Support Intern | CACI International, Arlington, VA   05/2021 – 01/2022
- Engineered AI Text Similarity Search Engine to make comparisons between 100's of old and latest Request for Proposals (RFPs) using MachineLearning and NLP techniques, reducing more than 60% of a manual search using Amazon Web Services (AWS).
- Detailed competitive business intelligence analysis on Palantir company to help Capture Managers to improve strategy
- Extracted and mined data from GovWin IQ and DACIS federal databases for analysis on competitors that resulted in 20% pricing cost reduction.
- Extracted data from the main server, transformed it using the R language and visualized it using Tableau, proposing the team on bidding and proposals.
- Developed solutions that enabled the capture team to exploit data, make connections, obtain insight, and augment data analysis techniques

Technical Proficiency

- **Programming Languages:** Python, Java, Bash Scripting, R, Ruby, SQL
- **Frameworks & Libraries:**
  - **Machine Learning & AI:** TensorFlow, PyTorch, sci-kit-learn, XGBoost, LightGBM, Keras, Hugging Face Transformers
  - **Natural Language Processing (NLP):** SpaCy, NLTK, GPT-3, BERT, OpenAI API, Transformers, T5, LLaMA
  - **Generative AI & RAG:** LangChain, LlamaIndex, GPT-4, Diffusion Models, VAE, GANs
  - **Data Engineering & ETL:** Apache Spark, PySpark, Kafka, Databricks, MLflow
  - **Cloud Platforms:** Amazon Web Services (AWS), Microsoft Azure (Azure ML Certified), Kubernetes, Docker
  - **Data Visualization:** Tableau, Plotly, Matplotlib, Seaborn, Power BI
  - **Databases:** SQL, NoSQL (MongoDB, Cassandra), Neo4j, PostgreSQL, MySQL, Redis, Elasticsearch, Azure Search
  - **Web Development:** Django, Flask, HTML, CSS, JavaScript, React, Bootstrap, WordPress
  - **Version Control & Collaboration:** GitHub, GitLab, Jira, Confluence, SharePoint
  - **Automation & Scripting:** Bash Scripting/Linux, CloudFormation, Terraform
  - **MLOps & CI/CD:** MLflow, GitHub Actions

Certifications:

- Microsoft Certified: Azure Fundamentals (AZ-900)
- Microsoft Certified: Azure Data Scientist Associate
- Microsoft Certified: Azure Generative AI Engineer Associate
- Neo4j Certified: Graph Data Science

Leadership Experience

Founder of Beloit Martial Arts Club   12/2018 – 05/2022
Led and managed 50-plus members; organized on-campus and off-campus events. Managed fundraising and promotion. Secured first place at the Wisconsin Martial Arts championship and National tournament.

Student Government Budget Director   9/2019 – 1/2020
Formalized effective budget models for departments and the 100+ student clubs by Maintaining budget limitations by keeping to outlined percentages and leveraged expenditure funds.