

# Modupeola Fagbenro

Portfolio: <https://modupeolawuraola.github.io/>  
Github: <https://github.com/Modupeolawuraola>

Email: [modupeola.fagbenro@gwu.edu](mailto:modupeola.fagbenro@gwu.edu)  
Mobile: (202)-361-5359

## EDUCATION

<b>George Washington University</b> <i>Masters of Science - Data Science</i> <i>Courses: Machine Learning, Algorithm Design, Natural Language Processing, Data Mining</i>	Washington DC, USA August 2023- May 2025
<b>University of Ilorin</b> <i>B.Sc.(ed) Educational Technology</i>	Ilorin, Nigeria December 2015- October 2018

## SKILLS SUMMARY

- **Languages:** Python(Pandas, numpy, scipy, matplotlib, seaborn) , SQL(window functions, ETL), R(statistical analysis, ggplot),JavaScript, CSS, HTML
- **Frameworks:** PyTorch, Scikit, NLTK, SpaCy, TensorFlow, Keras, Django, Flask
- **Tools:** Kubernetes, Docker, GIT, PostgreSQL, MySQL, SQLite, Tableau, PowerBI, AWS QuickSight, VS Code, PyCharm, Jupyter Notebook
- **Platforms:** Linux, Web, Windows, AWS(SageMaker, Bedrock, Redshift, S3, Athena, EC2, CDK), GCP, IBM Cloud
- **Soft Skills:** Team Leadership, Project Management, Cross-functional Collaboration, Communication, Time Management

## PROFESSIONAL EXPERIENCE

- **Amazon.com LLC** Bellevue, Washington  
*Business Intel Engineer Intern (Full-time)* May - August 2024
  - Designed and implemented an enterprise-wide data pipeline health monitoring system by developing Extract, Transform, Load (ETL) processes within a cloud-based warehouse, tracking 15,000+ job failures within the downstream tables, improving SLA compliance to 99.5%, and reduced mean time to resolution (MTTR) by 70% through automated alerting:
  - Developed LLM-powered query optimization chatbot analyzing 200+ daily queries, reducing execution time by 45% and projecting annual cost savings through improved efficiency. Prepared for production deployment:
  - Built real-time data warehouse health monitoring dashboard that recovered 4+ hours of redundant daily execution time, resulting in monthly compute cost savings:
  - Collaborated cross-functionally with data engineers and business Intel teams to translate complex technical findings into actionable insights:
- **OneCampus Academy** Akron, Ohio  
*Data Scientist (Remote part-time)* February 2022 - August 2023
  - Developed and deployed ML-based car price prediction model achieving 75% accuracy through feature engineering and hyperparameter optimization:
  - Built automated data pipeline for processing structured and unstructured dataset using SQL and Python:
  - Led 10-member data analysis team, Implemented A/B testing framework resulting in 15% revenue increase across retail outlets:
- **OpenPlanet Technology Limited** Abuja, Nigeria  
*Business/Data Analyst* May 2020 - July 2023
  - Developed and deployed predictive models achieving 85%+ accuracy across key business metrics, including customer churn prediction (90% accuracy) and revenue forecasting (87% R<sup>2</sup> score):
  - Analyzed customer behavior patterns across 1M+ transactions, identifying 3 key revenue drivers that led to 40% increase in quarterly profitability, 28% reduction in customer acquisition costs, and 35% improvement in customer retention rates:
  - Designed and implemented Extract, Transform, Load (ETL) pipelines, reducing reporting time by 60%:
  - Created and presented monthly executive dashboards translating complex data analysis into actionable business strategies, influenced strategic investments based on market trend analysis, Led 12 quarterly business reviews with stakeholders across 5 departments:

## TECHNICAL PROJECTS

- **AI Medical Research Assistant:** Built RAG system with Ollama LLM, ChromaDB for 5000+ medical documents. 80% query time reduction, >0.85 RAGAS scores. **Tech Stack: Python, Streamlit, Sentence Transformers, Ollama LLM, ChromaDB**
- **AI Advanced News Generation System:** Engineered hybrid LSTM+Attention (0.894 accuracy) + Llama-3 pipeline: 5M+ articles, 85% reduced inconsistencies. AWS Bedrock integration: 98% reliability, 10K+ daily requests. **Tech Stack:PyTorch, AWS, Llama-3, Streamlit, Boto3**
- **Image Classification with ResNet50:** Transfer learning: 91% accuracy, 179ms/step inference. (Computer Vision, Distributed Computing)  
Enhanced model performance through fine-tuning and data augmentation, reducing loss to 0.3627 with 8s/epoch training speed **Tech Stack: TensorFlow, ResNet50, Python, NumPy, Keras**
- **Heart Attack Risk Prediction:** Engineered ensemble ML models (Random Forest 62.7% accuracy, 41.3% precision; Gradient Boosting 63.7% accuracy, 30% precision) analyzing 8,700+ patient records to predict heart attack risks across 15 health indicators **Tech stack: Python, Scikit-learn, Pandas, Matplotlib, Seaborn**

## RESEARCH AND PUBLICATIONS

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- **George Washington University-Data Science for Sustainability Development** Washington, DC  
*Data Scientist Researcher* August 2023-Present
  - Collaborated with multi-disciplinary team on sentiment analysis project processing 2000+ social media posts during crisis events using Natural Language Processing (NLP) and machine learning:
  - Developed novel visualization approaches combining temporal and geospatial data to identify critical impact pattern:
  - Implemented topic modeling achieving 49% coherence score to analyze community support networks:
  - Collaborate with cross-functional teams to translate research findings into actionable policy recommendations:
- **Center for Distance Learning, University of Ilorin** Ilorin, Nigeria  
*Undergraduate Research Assistant* January 2017 - July 2018
  - Explored adoption and testing of Google Applications for Education (GAfE) among University of Ilorin lecturers across six (6) faculties. Aimed to promote digital technology utilization in higher education to enhance seamless teaching and learning processes:
  - Conducted descriptive research study involving 168 participants to assess the effectiveness of GAfE for lecturers and students:
  - Co-supervised six(6) undergraduate projects and provided hands-on computer-aided training to nineteen(19) interns over several months. **Research Publication:**

## VOLUNTEER EXPERIENCE

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- **Women in Data Science (WiDS) Conference Puget Sound** Bellevue, Washington  
*Marketing Lead Committee* October 2022- Present
  - Coordinate virtual meetings for community of more than 3000+ data science members, and manage social media postings across platforms like LinkedIn, Twitter, Instagram, and Facebook:
- **George Hacks** Washington, DC  
*Marketing committee and Hackathon Organizer* January 2023- present
  - Organized events, conducted and delivered workshops reaching over 20000+ developers. Managed social media posting across platforms like LinkedIn, Twitter, Instagram: