Abdul Rahman Shaikh

Data Scientist ● AI/ML Engineer

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SUMMARY

Data Scientist (Ph.D.) with 7+ years in ML/LLM systems end-to-end, from problem framing and feature engineering to A/B testing, deployment, and drift monitoring. Python, SQL, PyTorch, Spark, AWS; MLOps via MLflow/Kubeflow, Docker, Kubernetes. Translate state-of-the-art research into reliable, cost-aware products with measurable impact.

EDUCATION

- **Northern Illinois University** — Illinois, USA
  Ph.D. & M.S. in Computer Science — GPA: 3.9

TECHNICAL SKILLS

- **AI/ML Frameworks:** LangChain, PyTorch, HuggingFace, Keras, OpenCV, Scikit-learn, Flowise, N8N
- **LLM & GenAI:** Llama, LangChain, Fine-tuning (LoRA, QLoRA), RAG, Flash Attention
- **Programming:** Python, JavaScript, C, C++, Java, Node.js, D3.js, R, LaTex, TypeScript
- **Data Science:** Pandas, NumPy, Matplotlib, Seaborn, Plotly, Statistical Analysis, A/B Testing
- **Cloud & MLOps:** AWS, Azure, Docker, Kubernetes, MLFlow, Git, Weights & Biases
- **Databases & BI:** PostgreSQL, MySQL, MongoDB, Tableau, Power BI

EXPERIENCE

- **Northern Illinois University (DATA Lab, VA Lab & WASTE Lab)** — DeKalb, IL
  Researcher — Jan 2018 - Present
  - Architected and deployed scalable ML pipelines processing 1M+ daily transactions, reducing model inference latency by 65% through distributed computing frameworks like Apache Spark and Kubernetes orchestration.
  - Led end-to-end development of recommendation systems using deep learning architectures (transformers, neural collaborative filtering) that increased user engagement by 26%.
  - Enhanced model efficiency by implementing quantization, pruning, and distillation techniques, achieving 4x throughput on edge devices without sacrificing accuracy.
  - Implemented MLOps best practices with CI/CD pipelines, A/B testing frameworks, and monitoring systems using tools like MLflow, Kubeflow, and DataDog, reducing model deployment time from weeks to hours.
  - Built multi-agent LLM systems (LangChain, Flowise, AutoGen) for exploration and summarization in complex domains.
- **Amazon** — India
  Data Analyst — Aug 2016 - Dec 2017
  - Accelerated e-commerce database performance by 30% through SQL and MongoDB query optimization.
  - Implemented automated data quality assurance workflows using Python (Pandas, NumPy, Scikit-learn) to validate 500K+ daily records, achieving 95%+ accuracy and enhancing operational reliability by 22% across critical Amazon systems.

PROJECTS

- **LLMFlow: Scholarly Document Intelligence System** ⭘ Built an advanced RAG pipeline using LLMs with vector databases (Pinecone/Weaviate), achieving 65% reading time reduction across 100+ academic papers.
- **GenHealth: Multimodal Diagnostic Intelligence System** ⭘ Developed a multimodal AI system combining medical text, imaging, and structured data to boost diagnostic accuracy. Utilized NLP and CNNs to extract, align, and predict outcomes.
- **MixArt: Advanced AI Art Generation Platform** ⭘ Engineered a production-ready art generation system using FLUX and SDXL-Turbo with ControlNet integration, featuring real-time style transfer and deployment via Gradio.
- **ChatFit: Personalized AI Fitness Coach** ⭘ Built an end-to-end AI chatbot using LLMs for personalized workout and diet advice tailored to user profiles. Integrated React frontend and FastAPI backend with session logic and prompt tuning.

PUBLICATIONS

- **A. R. Shaikh**, H. Alhoori, and M. Sun, "YouTube and Science: Models for Research Impact," *Journal of Scientometrics*, 2022. [*doi: 10.1007/s11192-022-04574-5*]
- **A. R. Shaikh**, M. Sun, and H. Alhoori, "Toward systematic design considerations of organizing multiple views," IEEE Visualization and Visual Analytics (VIS), 2022. [*doi: 10.1109/VIS54862.2022.00030*]
- M. Sun, **A. R. Shaikh**, H. Alhoori, and J. Zhao, "SightBi: Exploring Cross-View Data Relationships with Biclusters," *IEEE TVCG 2021*, [*doi: 10.1109/TVCG.2021.3114801*] **Best Paper Honorable Mention.**
  For a complete list of publications, please visit - **Scholar profile** or **Website**

TEACHING & LEADERSHIP

- **Mentor at NIU WASTE LAB** — DeKalb, IL, USA
  Mentored and supervised 6 graduate students resulting in 4 co-authored research papers. — Jan 2024 - Present
- **Lab Head at NIU VA LAB** — DeKalb, IL, USA
  Led AI-driven visualization projects, significantly advancing multi-view exploratory analytics. — Aug 2021 - Present
- **Teaching Assistant at NIU** — DeKalb, IL, USA
  Supported undergraduate courses in C++, Java, and Databases. — Aug 2018 - Aug 2023