Abdul Rahman Shaikh

Portfolio: sabdulrahman.github.io/
LinkedIn: linkedin.com/iamsabdurahman

Mobile: +1-224-848-2725
Email: iamsabdurahman@gmail.com
Scholar: scholar.com/sabdulrahman

Summary

Ph.D. candidate in Computer Science with 7+ years of experience specializing in machine learning, generative AI, computer vision, and natural language processing. Experienced in building real-time AI systems, autonomous multi-agent frameworks, multimodal learning pipelines, transformer-based architectures and MLOps. Proficient with PyTorch, Hugging Face, LangChain, Llama, and related AI/ML tools for creating scalable, production-ready solutions.

Education

- **Northern Illinois University** — DeKalb, Illinois
  Ph.D. and M.S. in Computer Science — *Expected August 2025*

Skills Summary

- **AI/ML Frameworks** Llama, LangChain, PyTorch, HuggingFace, Keras, OpenCV, Flowise, N8N
- **Programming** Python, R, JavaScript, C, C++, Java, HTML/CSS, LaTex, TypeScript
- **LLM & GenAI** Prompt Engineering, Fine-tuning (LoRA, QLoRA), RAG, Flash Attention
- **Cloud & MLOps** AWS, Azure, Docker, Kubernetes, MLFlow
- **Tools & Libraries** PowerBI, Tableau, Matplotlib, Seaborn, Plotly, Numpy, Pandas, SpaCy
- **Web & Databases** React, Node.js, D3.js, MySQL, MongoDB, PostgreSQL, SQLite

Professional Experience

- **Northern Illinois University (DATA Lab, VA Lab & WASTE Lab)** — DeKalb, IL
  Researcher — *Jan 2018 - Present*
  - Engineered and deployed large language models (LLMs) like GPT-4 Turbo, Claude-3, and Mixtral-8x7B into high-performance analytical pipelines, improving natural language reasoning and multimodal analysis accuracy.
  - Built robust model training workflows utilizing Vision Transformers (ViTs), Stable Diffusion, DALL-E 3, and RAG-based retrieval systems, significantly improving both predictive model accuracy and generative output fidelity.
  - Designed and deployed high-performance computer vision models using Vision Transformers (ViTs), convolutional networks (CNNs), and diffusion models, boosting image classification and segmentation accuracy across diverse datasets.
  - Applied advanced segmentation and prompting techniques using Segment Anything Model (SAM) and CLIP, successfully addressing complex domain-specific challenges in computer vision and textual data analysis.
- **Amazon** — India
  Quality Specialist — *Aug 2017 - Dec 2017*
  - Optimized data querying workflows using SQL and MongoDB, reducing latency in performance-critical pipelines.
  - Performed comprehensive data cleansing, exploratory analysis, and quality assurance using Python (Pandas, NumPy, Scikit-learn), enhancing critical dataset integrity and increasing operational reliability by 22%.

Projects

- **LLMFlow: Summarization of Scholarly Documents (Python, LangChain)** Integrated GPT-4 and RAG pipelines with LangChain to summarize large academic documents, reducing reading time by 60% across 200+ documents. (Jan - July 2024)
- **MixArt: Generative Artwork with Stable Diffusion (Python, Stable Diffusion, LoRA)** Built an art-generation pipeline using Stable Diffusion fine-tuned with LoRA, allowing customized outputs based on user input. (July - Dec 2024)
- **EcoScan: AI-Powered Ocean Pollution Mapping (Python, TensorFlow, CNNs)** Developed an AI system utilizing CNNs to analyze satellite imagery for detecting oceanic microplastic pollution, enhancing efficiency by 90%. (Jan - Apr 2024)
- **GenHealth: Multimodal Medical Report Analysis (Python, GPT-4, BLIP-2)** Created a multimodal analysis pipeline combining GPT-4 and BLIP-2 for medical reports, boosting diagnostic extraction accuracy by 30%. (Sep - Dec 2024)

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 5 graduate students resulting in 3 co-authored research papers. — *Jan 2024 - Present*
- **Lab Head at NIU VA LAB** — DeKalb, IL, USA
  Designed and Led multiple projects related to exploration using multiple view visualizations. — *Aug 2021 - Present*
- **Teaching Assistant at NIU** — DeKalb, IL, USA
  Supported undergraduate courses in C++ and Databases courses. — *Aug 2018 - May 2020*