

Abdul Rahman Shaikh

AI/ML Engineer

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SUMMARY

AI/ML Engineer (Ph.D.) with 7+ years delivering end-to-end ML and LLM systems, from problem framing to production monitoring. Specialized in healthcare AI and retrieval-augmented systems, with strong expertise in Python, PyTorch, and AWS. Proven record of turning research into deployed, cost-efficient AI products with measurable impact.

SKILLS

- **LLM & GenAI:** LLaMA, HuggingFace, LangChain, Fine-tuning (LoRA, QLoRA), RAG, Flash Attention
- **AI/ML Frameworks:** PyTorch, Scikit-learn, Keras, OpenCV, Flowise, n8n
- **Cloud & MLOps:** AWS, GCP, Azure, Docker, Kubernetes, MLflow, Git
- **Data Science:** Pandas, NumPy, Matplotlib, Seaborn, Plotly, Statistical Analysis, A/B Testing
- **Programming:** Python, JavaScript, C/C++, Java, Node.js, REST APIs, R, LaTeX, D3.js
- **Databases & BI:** PostgreSQL, MySQL, MongoDB, Tableau, Power BI

EXPERIENCE

- **Northern Illinois University (DATA Lab, VA Lab & WASTE Lab)** DeKalb, IL
AI/ML Engineer Jan 2018 - Present
 - Translated advanced AI research into production systems across healthcare, environmental monitoring, and social media, boosting model performance by up to 15% and supporting thousands of daily users.
 - Owned the full ML lifecycle, from data acquisition and feature engineering to deployment, reducing training time by 35% and increasing predictive accuracy by 12% through systematic optimization.
 - Improved model efficiency using quantization, pruning, and distillation, achieving up to 4× inference throughput on resource-constrained and edge deployments without accuracy loss.
 - Established production MLOps pipelines with CI/CD, A/B testing, and continuous monitoring using MLflow, Kubeflow, and Datadog, cutting deployment cycles from weeks to hours.
 - Built multi-agent LLM systems (LangChain, AutoGen) for automated literature review and healthcare Q&A workflows.
- **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 91%+ 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 fusing medical text, imaging, and structured data, achieving 87% diagnostic accuracy using NLP-CNN integration.
- **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 - [Google Scholar profile](#) or [Website](#)

EDUCATION

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

TEACHING & LEADERSHIP

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

Aug 2018 - Aug 2024