

# Shakil Mosharrof

Microsoft Certified: [AI Engineer \(AI-102\)](#), [Data Scientist \(DP-100\)](#), [Databricks Certified: Machine Learning Engineer Professional](#), [NVIDIA-Certified Associate: AI Infrastructure and Operations](#) | Machine Learning Engineer | MLOPs | Agent Engineering | System Design | [Researcher](#)

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[Portfolio](#)  
[GitHub](#)  
[LinkedIn](#)

## SKILLS ↗

Language	Python, R, C, C++, L <sup>A</sup> T <sub>E</sub> X, C#, Bash, JavaScript, SQL
Backend	Flask, FastAPI, Redis, RQ, Celery, Django, Pydantic, Alembic, SQLAlchemy, Kafka
Database	MySQL, PostgreSQL, MongoDB, SQLite
Machine Learning	ML Metrics & evaluation, Supervised & Unsupervised learning, scikit-learn, XGboost, LightGBM, LLMs, PyTorch, NLP, Tensorflow, SpaCy, T5, BERT, OpenCV, Yolo, GANs, CNN, Transformers, Agentic & LLM Solutions Development, Langchain Ecosystem, RAG, HuggingFace, Fine-Tuning Datasets with LLM and traditional ML Models, Prompt Engineering, ETL pipeline, W&B, AirFlow, DVC, MCP, MLflow
DevOps	CI/CD Pipelines (Github, AZDO), Docker, AWS, Azure

## PROJECTS | CERTIFICATIONS ↗

**MIST Mongol Barota (An autonomous rover) 2021 - 2023**  
*Mars Society's University Rover Challenge (URC)* USA  
*Anatolian Rover Challenge (ARC)* UKET, Turkey  
Tech Stack [ROS](#), [Robotics](#), [ML](#), [Autonomy](#), [Python](#), [Flask](#), [R&D](#)

**Retrieval Augmented Generation Using Gemini Pro LLM and FastAPI** [Github](#)  
Tech Stack [FastAPI](#), [Gemini](#), [LLM](#), [RAG](#), [API development](#)

**Pretrained CNN-based Dog Classifier** [Github](#) [Certificate](#)  
Tech Stack [Python](#), [ResNET](#), [VGG16](#), [Machine Learning](#)

**NLTK LSTM Based HateSpeech Detection** | [Github](#)  
Tech Stack [ML](#), [NLP](#), [LSTM](#), [Python](#)

**Predicting Bike-sharing Demand Using Machine Learning with AutoGluon** | [Github](#)  
Tech Stack [MLops](#), [Sagemaker](#), [AutoGluon](#), [Torch](#), [MaxNet](#)

**Automatic Literature Review generation with RAG Based LLMs** | [Github](#)  
Tech Stack [LLMs](#), [RAG](#), [OpenAI API](#), [HuggingFace Models](#)

**PyTorch-Create Your Own Classifier** [Github](#) [Certificate](#)  
Tech Stack [Python](#), [CNN](#), [Machine Learning](#), [AWS](#), [Udacity](#)

**MNIST Neural Network Project using pyTorch** | [Github](#)  
Tech Stack [PyTorch](#), [Python](#), [CNN](#), [Machine Learning](#)

## RESEARCH & PUBLICATIONS (7+) ↗ | SCHOLAR ↗

- DeepTriNet: A Tri-Level Attention Based DeepLabv3+ Architecture for Semantic Segmentation of Satellite Images. [\[Link\]](#) [got the best paper award]
- Performance Analysis of Various EfficientNet Based U-Net++ Architecture for Automatic Building Extraction from High Resolution Satellite Images. [\[Link\]](#)
- CycleGAN-Based Data Augmentation with CNN and Vision Transformers (ViT) Models for Improved Maize Leaf Disease Classification. [\[Link\]](#)
- Biomolecular Analysis of Soil Samples and Rock Imagery for Tracing Evidence of Life Using a Mobile Robot [\[Link\]](#)
- Enhancing Mango Leaf Disease Classification: ViT, BiT, and CNN-Based Models Evaluated on CycleGAN-Augmented

Data. [\[Link\]](#)

- Automatic Literature Review Generation : An Improved LLM-RAG Based Solution Embedded With Regex and T5. [Link](#) [\[Thesis\]](#) [\[ICISSET-2024\]](#)

## EXPERIENCE ↗

**Machine Learning Engineer** February 2025 - Now  
*ADN Diginet / Metlife* Onsite

- Deliver recommendation system that boosted up lead collection and sales by 22%
- Build & deployed end-to-end On-prem and Azure MLOPs pipeline in on bare-metal servers in two different geolocations, collaborate with Data science, DevOps, Cloud & Data team.

**Machine Learning Engineer December 2024 - March 2025**  
*Culture Hint* Remote (Freelance) London, UK

- Improving and implementing machine learning and computer vision solutions with back-end API designing with AWS EC2, CI/CD Pipeline, YOLOv8, Labelstudio

**AI Engineer** July 2024 - December 2024  
*Delineate Pro Inc. (YC'25)* Remote (Contract) Massachusetts, USA

- Developed and delivered end to end LLM based RAG solutions for major pharmaceutical companies in the USA, enhancing their research workflows and decision-making processes.
- Implemented cloud-based Retrieval-Augmented Generation (RAG) agents to optimize data retrieval and processing, significantly improving research efficiency and accuracy for pharmaceutical applications.

**Software Engineer (AI/ML)** March - August 2024  
*Gigalogy Inc.* Hybrid (BD), Tokyo, Japan

- Engineered scalable RESTful APIs using FastAPI, integrating SQLAlchemy, PyDantic, and Docker, while ensuring robust performance through Insomnia API testing.
- Designed and deployed a RAG LLM-based recommender system for a Japanese E-Commerce platform, significantly enhancing product recommendation accuracy and user engagement.

**Software & Autonomous System Developer (Onsite) 2021 - 2023**  
*Mars Society's University Rover Challenge (URC)* USA  
*Anatolian Rover Challenge (ARC)* UKET, Turkey

- Led the development of an autonomous rover system, securing 1st place at the University Rover Challenge (URC 2021) and 3rd place at the Anatolian Rover Challenge (ARC 2022), competing against teams from over 14 countries worldwide. [Link](#) , [Link](#).
- Achieved over \$50,000 in funding from government and non-government sources, contributing to the success of projects in URC 2023 and ARC 2023, where my team placed 2nd in Asia and 5th globally.

## EDUCATION ↗

**B.Sc in Computer Science and Engineering**  
*Military Institute of Science and Technology*  
**Higher Secondary School Certificate**  
*Barishal Cadet College*