# Md Abu Sayed Khan Faisal

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## Summary

I'm passionate about building AI-driven solutions to real-world problems. As a Computer Science graduate with a Master's degree specializing in **Machine Learning** and **Big Data**, I bring strong programming skills and hands-on experience in developing intelligent, data-driven systems. I'm eager to contribute to impactful projects in AI, data science, and software engineering. Let's connect and explore opportunities to collaborate on innovative tech solutions.

## Quick Guide

- Core Strengths: Machine Learning, Deep Learning, Computer Vision, Big Data Analytics, and AI Reliability (GitOps for ML).
- Research Interests: AI for Renewable Energy Forecasting, Autonomous Systems, and Reliable AI Deployment using MLOps & GitOps principles.
- Practical Skills: Python, TensorFlow, PyTorch, Scikit-learn, Spark, Docker, Kubernetes, Argo CD, GitHub Actions, Google Cloud Platform.
- Academic Highlights: Master of Computer Science (Machine Learning & Big Data) – University of Wollongong | Distinction.
- Research Experience: Led projects on AI-driven energy prediction, GitOps-based ML pipelines, and autonomous navigation using computer vision.
- Collaboration Goal: Open to industry roles (AI/ML Engineer, Data Scientist) and research opportunities (RA/PhD) focusing on sustainable AI and automation.
- Portfolio & Research Profile: Explore projects and research at github.com/faisalkhan94 | orcid.org/0009-0002-1525-5252

## Education

**University of Wollongong, Australia** - Master of Computer Science (Machine Learning & Big Data) July 2023 – July 2025

- Grade: Distinction (View Credential)
- **Coursework:** Machine Learning, Big Data Analytics, Computer Vision, AI in Cybersecurity, Research Methodology .

**Southeast University, Bangladesh** - Bachelor of Science in Computer Science and Engineering October 2015 – March 2020

- Grade: First Class Honours (View Credential)
- **Coursework:** Data Structures and Algorithms, Database Design, Operating Systems, Computer Networking, Software Development and Project Management, Research Methodology

## Research in Progress

**AI Applications in Renewable Energy Forecasting and Optimization** 2025

*Md Abu Sayed Khan Faisal, manuscript in preparation, 2025.*

Target Journal: Renewable & Sustainable Energy Reviews

**Focus:** Developing efficient ML models for renewable energy prediction and optimization to support sustainable power systems.

**Reconciled AI: Applying GitOps Principles to Ensure AI Applications Stay Reliable and Sustainable** 2025

*Md Abu Sayed Khan Faisal, manuscript in preparation, 2025.*

Target Journal: IEEE Access

**Focus:** Integrating MLOps and GitOps principles to enhance reliability and reproducibility in AI deployment.

## Projects

**ERP on University Management System**(Undergraduate Project – Southeast University) github.com/faisalkhan94/research-portfolio

- Designed a centralized student–course–faculty data model (3NF) with role-based access and developed core modules for admissions, enrollment, grading, and attendance.
- Built analytics dashboards for performance insights and exposed REST APIs for integration with external systems.
- Tools: Python (Django/FastAPI), PostgreSQL/MySQL, React, Docker, GitHub Actions

**Reconciled AI- Applying GitOps Principles to Ensure AI Applications Stay Up and Running** (Capstone Project – University of Wollongong)

- Developed an end-to-end GitOps/MLOps pipeline integrating Docker, Kubernetes, Argo CD, and GitHub Actions for automated model deployment and rollback.
- Implemented MLflow tracking, Prometheus/Grafana monitoring, and scheduled retraining for reliable and reproducible AI workflows.
- Tools: Python, TensorFlow/scikit-learn, Docker, Kubernetes, Argo CD, MLflow, Prometheus, GitHub Actions, GCP

**Autonomous Navigation Robot — Vision-Guided Ball Collection & Goal-Scoring System**

- Designed and programmed a LEGO MINDSTORMS EV3 robot to autonomously detect, collect, and score balls using integrated motors, sensors, and vision algorithms.
- Implemented sensor-based navigation and task coordination logic enabling penalty-shootout and ball-retrieval missions aligned with assignment specifications.
- Tools: Python, LEGO EV3, EV3 Classroom Software, Camera & Proximity Sensors

## Technical Competencies

**Languages:** Python, Java, SQL (MySQL), NoSQL (MongoDB)

**Libraries & Tools:** Pandas, NumPy, Matplotlib, Seaborn, Power BI, Tableau, Git, GitHub

**Platforms & Frameworks:** Machine Learning & AI: Development, training & deployment (classification, regression, clustering, deep learning), Google Cloud Platform (GCP), Kubernetes, GitOps (Argo CD, GitHub Actions, GKE), MLOps & Deployment: Model serving, CI/CD pipelines, containerization (Docker, Kubernetes)

## Experience

**Jr Software Engineer**, IT WAY BD – Dhaka, Bangladesh March 2021 – March 2023

- Programming & Data Handling: Python (pandas, NumPy), SQL, CSV/JSON data processing.
- Machine Learning: Basic model development (classification, regression, clustering).
- ETL & Data Pipelines: Data cleaning, transformation, and validation workflows.
- Databases: MySQL, SQL-based queries for reporting and analytics.
- Tools & Deployment: Git/GitHub, Flask (internal tools), Docker (basic containerization).

**Software Engineer Intern**, Divine IT Ltd – Dhaka, Bangladesh January 2020 – April 2020

- Development of Python-based software.
- Gathered experience as a back-end developer.
- Enhanced experience as a Python developer with a focus on optimizing data-processing pipelines and improving algorithmic efficiency from quadratic $\mathcal{O}(n^2)$ to near-linear $\mathcal{O}(n \log n)$ performance.

## Certifications & Training

**Machine Learning Specialization** – (DeepLearning.Ai) View Credential

- Covered supervised, unsupervised, and reinforcement learning; implemented ML algorithms for prediction and optimization using Python and NumPy.

**Deep Learning Specialization** – (DeepLearning.Ai) View Credential

- Gained practical experience in building neural networks, CNNs, RNNs, and sequence models using TensorFlow and Keras.

**Renewable Energy Specialization** – (University of Colorado, Boulder) View Credential

- Explored renewable power generation systems, energy transition models, and sustainable technology integration for decarbonization.

## References

**Available upon request.**