Afsana **Airin**

Gopibag, R.K. mission road, Dhaka-1203, Bangladesh

☐ (+880)1799316292 | ✉ afsanaairin09@gmail.com | ⓞ Afsanaairin | 🔗 https://www.linkedin.com/in/afsana-airin/

Education

United International University *Madani Avenue, Dhaka*
Bachelor in Computer Science and Engineering *January 2019 - May 2023*

- Major in Data Science
- CGPA: 3.63

Research Interests

- Data Mining and Machine Learning
- Large Language Models
- Computer vision

Publications

Published

Attention-Based Scene Graph Generation: A Review ⬀ *Phnom Penh, Cambodia*
Afsana Airin, Rezab Ud Dawla, Ahmed Shabab Noor, Muhib Al Hasan, Ahmed Rafi Hasan, Akib *December 2022*
Zaman, Dewan Md Farid, 14th International Conference SKIMA

A Novel Method for Imbalanced Data Classification based on Label Reassignment ⬀ *Honkong*
Ahmed Shabab Noor, Afsana Airin, Rezab Ud Dawla, Ahmed Rafi Hasan, Muhib Al Hasan, Akib *November 2022*
Zaman, Dewan Md Farid, IEEE Region 10 International Conference TENCON

The Impact of Data Locality on the Performance of Cluster-Based Under-Sampling ⬀ *Noakhali, Bangladesh*
Ahmed Shabab Noor, Muhib Al Hasan, Ahmed Rafi Hasan, Rezab Ud Dawla, Afsana Airin, Akib *September 2022*
Zaman, Dewan Md Farid, MIET 2022

Research Experience

Thesis *Madani Avenue, Dhaka*
Scene Graph generation *2022*
- Conducted an in-depth literature review on several SGG methodologies, including RNN/LSTM and attention-based SGG
- Gap analysis on the relationship detection between distant objects to enhance the scene graphs integrity
- Feature analysis of the existing applications that are using SGG methods
- Developed Image pipeline and Language Attention pipeline utilizing self-attention mechanisms

Work Experience

Aboitiz Data Innovation *Singapore, Remote*
Data Engineer *August 2023 - Present*
- Designing and maintaining batch and stream data pipelines using Python, Spark, and SQL.
- Implementing data pipelines with Databricks, Apache Airflow, dbt (Data Build Tool), and AWS
- Utilizing AWS services such as S3 storage, API Gateway, and Lambda functions.
- Building virtual machines and compute clusters to optimize resource allocation, including CPU and memory usage.
- Collaborating closely with the Data Science team and clients to align on project goals and deliverables.

UIU Mars Rover Team   *Madani Avenue, Dhaka*
Sᴄɪᴇɴᴄᴇ Tᴇᴀᴍ Co-Lᴇᴀᴅ   *June 2021 - June 2022*

- Collaborated with the science team to develop a deep learning model and a custom dataset for rock detection
- Obtained knowledge about data cleaning and maintaining
- Participated in the world's most prestigious undergraduate competition "University Mars Rover Challenge" at MDRS, Utah, USA in 2022
- Achieved **1st** place in Asia and **13th** in worldwide.

Awards/ Achievements

Academic Achievements

2019-2023	**100% Scholarship Award (Summer 2019) and 50% Tuition Waiver for the remaining semesters**, United International University	*UIU, Bangladesh*
2022	**Achieved 1st place in Asia and 13th worldwide**, University Mars Rover Challenge	*UTAH, USA*
2022	**Runner up, software project**, Intra-university project show competition	*UIU, Bangladesh*
2017- 2022	**4-year Board Scholarship for outstanding performance in the Higher Secondary Certificate (HSC) Examination**, Bangladesh Dhaka Education Board	*Dhaka, Bangladesh*

Professional Achievements

2024	**Received Promotion at workplace for exceptional performance and contribution to data pipeline management**, Aboitiz Data Innovation (ADI)	*Singapore*

Other Activities

2025	**Completed 10 km Run, demonstrating commitment, endurance, and personal discipline**, Dhaka International Marathon	*Dhaka, Bangladesh*
2022	**Public Relations Secretary, Robotics Club — organized events, managed outreach, and coordinated student engagement activities**, UIU Robotics Club	*UIU, Bangladesh*
2019	**Debater of the tournament (English Debate)**, 10th Intra-university Debate Competition	*UIU, Bangladesh*

Projects

Fuel Management System (FMT) [Industry Project]

Pʏᴛʜᴏɴ| Sᴘᴀʀᴋ | SQL   *2025*

- Besides Renaissance, I am leading the FMT project on the Data Engineering side.
    - Developed a robust data pipeline to automate the Philippines' fuel pricing management system.
    - Extracted and integrated data from different sources using Python and Spark, and transformed them for the data science team.
    - Automated key formulas and pricing calculations within the pipeline.

Renaissance [Industry Project]

Pʏᴛʜᴏɴ| Sᴘᴀʀᴋ | SQL   *2024*

- For the past year, I have been working on the Renaissance project to build and optimize data pipelines for machine learning models.
    - Developed end-to-end data pipelines for data ingestion, transformation, and orchestration using technologies such as Spark, Databricks, and Airflow.
    - Enhanced forecasting accuracy by implementing real-time data integration.
    - Reducing processing latency through the use of cloud-based AWS Lambda functions

Rock Detection Model (University Rover Challenge 2022) [Academic Project]

Pᴀɴᴅᴀs | OᴘᴇɴCV | TᴇɴsᴏʀFʟᴏw   *2022*

- Developed a binary rock classification pipeline to classify fossil and metamorphic rock using Python and OpenCV.
- Processed and analyzed large image datasets, applying VGG16 for feature extraction.

InstaCity: A social media App [Academic Project]

REACT NATIVE | FIREBASE   *2022*

- A social media platform where users will be able to upload pictures and statuses. The picture and the text status are stored in Firebase real-time database. I did the project for my Mobile Application Development course.

Codersher: A coding contest platform [Academic Project]

PHP | BOOTSTRAP   *2023*

- It was for my Computer Security course. Here, I applied attack prevention methods CSRF token, SQL Injection, and Bruteforce in the backend.

Reference

Prof. Dr. Dewan Md. Farid, Dean CS Dept, Southeast University   *Dhaka, Bangladesh*

Akib Zaman, Lecturer, United International University, Phd Candidate, MIT   *Cambridge, MA, USA*