europass

Arif Billah

Passport: B00199376 | **Date of birth:** 30/12/2000 | **Place of birth:** Dhaka, Bangladesh | **Nationality:** Bangladeshi | **Gender:** Male | **Phone number:** (+880) 1793636121 (Home) | **Email address:** arifbillah8888@gmail.com | **Website:** http://www.mrarifbillah.com/ | **LinkedIn:** mrarifbillah | **Address:** 224/4, West Manikdi, 1206, Dhaka, Bangladesh (Home)

ABOUT ME

I am a Computer Science & Engineering graduate with a major focus on Data Science and experience in statistical modeling, predictive analytics, feature engineering, and supervised learning. I have research experience in machine learning and image processing, including peer-reviewed conference publication(s). Alongside research, I have strong full-stack development skills in React.js, Next.js, Node.js, PHP, and MySQL. I aim to pursue a Master's in Cyber Security to build expertise in secure systems, privacy, and resilient digital infrastructure.

WORK EXPERIENCE

SOFTWARE DEVELOPER INTERN (INTERNSHIP) – ARTHOR LIMITED – 01/10/2023 – 30/09/2024 – DHAKA, BANGLADESH

- Supported backend development tasks (API development, database operations, debugging).
- Prepared technical documentation and assisted with analysis tasks.
- Collaborated with the development team to deliver assigned modules on time.

UNDERGRADUATE RESEARCH ASSISTANT – UNITED INTERNATIONAL UNIVERSITY – 01/02/2025 – 30/08/2025 – DHAKA, BANGLADESH

- Conducted applied research in machine learning and digital image processing.
- Built YOLO-based models for indoor plant health classification (up to 96.8% accuracy).
- Contributed to projects on water quality prediction and AI energy efficiency in LLMs/VLMs.
- Worked with Python, scikit-learn, XGBoost, pandas, NumPy, and data visualization tools.

EDUCATION AND TRAINING

2019 – 2025 Dhaka, Bangladesh

BSC IN COMPUTER SCIENCE AND ENGINEERING United International University

Website https://www.uiu.ac.bd/ | **Level in EQF** EQF level 6

2015 – 2017 Dhaka, Bangladesh

ALIM (HIGHER SECONDARY CERTIFICATE EQUIVALENT) Darunnazat Siddikia Kamil Madrasah

Website https://dskm.ac.bd/ | **Field of study** Science | **Level in EQF** EQF level 4

2013 – 2015 Dhaka, Bangladesh

DAKHIL (SECONDARY SCHOOL CERTIFICATE EQUIVALENT) Manikdi Islami Alim Madrasah

Website https://mism.edu.bd/ | **Field of study** Science | **Level in EQF** EQF level 3

LANGUAGE SKILLS

Mother tongue(s): **BENGALI**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Full-Stack Web Development

Web Development: HTML5, CSS3, JavaScript, React.js, Node.js, Express.js, Bootstrap | Node.js, Express.js, PHP | MySQL, Amazon EC2 | Deployment and version control (Git, GitHub)

Programming & AI Tools

Python, Java, JavaFX | TensorFlow, Scikit-learn, OpenCV | Data analysis, visualization, and automation

Research & Academic Skills

Machine Learning and Data Mining | Digital Image Processing | Green computing and sustainable AI practices | Research paper writing and conference presentation

Cyber Security Fundamentals

JWT Authentication | Secure coding | API Security

PROJECTS

02/2024 – 05/2024
Easy Ride — UIU Campus Ride App

A JavaFX desktop application simulating a campus ride-hailing system with ride booking, vehicle selection, and trip history. Demonstrates advanced OOP concepts, SOLID principles, and design patterns.

Link https://github.com/arifbillah30/easy_ride

09/2024 – 07/2025
Swift Shop BD - E-commerce Web Application

Developed a full-stack e-commerce platform with user and admin panels and a MySQL database. Built REST APIs with Node.js and implemented JWT-based authentication to secure login and protect routes/endpoints.

Link https://github.com/arifbillah30/Swift-Shop-BD

02/2025 – 11/2025
Improved Single-Cell ATAC+RNA Classification

Developed a complete machine learning pipeline for classifying single-cell ATAC+RNA data using PCA, Factor Analysis, and scVI embeddings. Achieved a breakthrough **99.96% F1 score** on neuronal cells by applying SMOTE in embedding space and automated annotation with CellTypist. Compared performance across PBMC and AD datasets with 180:1 class imbalance. Implemented end-to-end scripts for preprocessing, annotation, classification, and visualization.

Link https://github.com/arifbillah30/improved-single-cell-annotation

06/2025 – 10/2025
Water Quality Prediction of Dhaka Rivers Using ML

Built a machine-learning pipeline to classify Water Quality Index (WQI) using physicochemical parameters (pH, DO, BOD, COD, TDS, etc.). Applied XGBoost and Random Forest for prediction and used SHAP for feature importance. Identified pollution hotspots and key contributors to water quality degradation.

RECOMMENDATIONS

Dr. Riasat Azim Associate Professor

I supervised Arif Billah during his Final Year Design Projects at UIU. He showed strong analytical skills, excellent programming ability, and a clear focus on data science. He led an advanced project on single-cell data analysis and contributed to research in machine learning, image processing, and environmental analytics. Arif is motivated, disciplined, and highly suitable for a master's program.

Email riasat@cse.uiu.ac.bd | **Phone** (+880) 1796619200

Prof. Dr. Farid Ahammad Sobhani Professor

Arif actively participated in academic activities with sincerity and enthusiasm. During our educational tour to Zinda Park, he volunteered in event organization and designed the event banner, contributing significantly to the program's success.

Email drsobhani@uiu.ac.bd | **Phone** (+880) 1767887261

PUBLICATIONS

2026

A Deep Learning Approach for Indoor Plant Health Monitoring: Classification of Healthy, Unhealthy, and Dead Plants

Published Springer Nature proceedings chapter (ICTIS 2025). Proposed and evaluated YOLO-based models for indoor plant health classification (Healthy/Unhealthy/Dead), with YOLOv11 achieving the best performance (up to 96.8% accuracy).

Akter, T., Rahman, S., Billah, A., Haque, A., & Rahman, R. (2026). A Deep Learning Approach for Indoor Plant Health Monitoring: Classification of Healthy, Unhealthy, and Dead Plants. ICTIS 2025, Springer Nature, LNNS 1510, 161–170.

Authors: Tamanna Akter; Shahriar Rahman; Arif Billah; Ashraful Haque; Raiyan Rahman | **Journal Name**: 9th Int. Conf. on ICT for Intelligent Systems (ICTIS 2025) | **Volume, Issue and Pages**: LNNS, vol. 1510, pp. 161–170 | **Publisher**: Springer Nature

VOLUNTEERING

05/08/2023 – 05/08/2023 United International University, Dhaka, Bangladesh

Educational Tour Volunteer & Event Organizer

I volunteered during an educational tour to Zinda Park, assisting in event organization and coordination. I also designed the event banner, which contributed to the visual presentation and overall success of the program. The role involved teamwork, communication, and initiative in managing on-site activities.

HOBBIES AND INTERESTS

Machine Learning and Research

I read research papers and run small experiments to explore new methods in machine learning and data-driven systems.

Problem Solving and Algorithms

I practice coding challenges to strengthen my algorithmic thinking and programming skills.

Web Development and Personal Projects

I enjoy building modern web applications and experimenting with front-end and back-end technologies. I regularly work on personal projects to improve my skills in React.js, Next.js, Node.js, PHP, and modern web frameworks.

Cyber Security & Privacy

Interested in secure systems, privacy, and threat awareness; I follow cybersecurity news and practice secure coding concepts.