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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 majoring in Data Science with experience in statistical modeling, predictive analytics, feature engineering, and supervised learning. My research includes publications in image processing and machine learning. I also have strong full-stack development skills in React.js, Next.js, Node.js, PHP, and MySQL. I aim to pursue a research-oriented Master's in Europe to deepen my expertise and contribute to impactful, data-driven innovation.

WORK EXPERIENCE

FREELANCE FULL-STACK WEB DEVELOPER – DHAKA, BANGLADESH

SOFTWARE ENGINEER – 01/01/2023 – CURRENT

• Developed full-stack web applications for international clients using React.js, Next.js, Node.js, Express.js, PHP, and MySQL.
• Built responsive user interfaces, REST APIs, dashboards, and custom web features based on client requirements.
• Managed client communication, requirement gathering, and project delivery in a remote freelance environment.
• Deployed applications using Vercel, AWS EC2, and cPanel, ensuring performance and reliability.

UNITED INTERNATIONAL UNIVERSITY – DHAKA, BANGLADESH

Business or Sector Professional, scientific and technical activities |

Department Department of Computer Science and Engineering | **Email** abillah192088@bscse.uiu.ac.bd |

Website https://www.uiu.ac.bd/

UNDERGRADUATE RESEARCH ASSISTANT – 01/02/2025 – 30/08/2025

- Conducted multidisciplinary research in machine learning, digital image processing, computational genomics, and green computing.
- Developed YOLO-based deep learning models for indoor plant health classification, achieving up to 96.8% accuracy.
- Co-authored research projects in water quality prediction and AI energy efficiency in LLMs/VLMs.
- Gained experience working with Python, Scikit-learn, XGBoost, Pandas, NumPy, and data visualization tools.

EDUCATION AND TRAINING

01/06/2019 – 01/12/2025 Dhaka, Bangladesh

BSC IN COMPUTER SCIENCE AND ENGINEERING

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

01/07/2015 – 23/07/2017 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

01/05/2013 – 30/05/2015 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

PROJECTS

20/02/2025 – 17/11/2025

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

01/06/2025 – 05/10/2025

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.

01/02/2024 – 01/04/2024

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

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

2025

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

Presented a deep learning research paper at the ICTIS 2025 conference, focusing on automated plant health classification using image analysis and neural network techniques. The paper was selected for publication under Springer Nature after conference review.

Authors: Tamanna Akter, Shahriar Rahman, Arif Billah, Ashraful Haque, Raiyan Rahman | **Journal Name**: 9th Int. Conf. on ICT for Intelligent Systems (ICTIS 2025) | **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 enjoy exploring the latest developments in machine learning, data science, and sustainable computing. I regularly read research papers and work on small experimental projects to test new algorithms and analytical techniques.

Creative Design and Reading

Interested in creative design, UI concepts, and digital art. I also enjoy reading technology articles, science blogs, and research journals to stay updated on modern computing trends.

Problem Solving and Algorithms

I enjoy practicing coding challenges and algorithmic problem-solving to strengthen my logical 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.