

Y B ARZOO

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CS student (BRAC University) with diverse research interests spanning **Human–Computer Interaction (HCI)**, **Artificial Intelligence (AI)**, **Machine Learning (ML)**, **Computer Vision**, **Data Science**, and **Quantum Machine Learning**. Experienced in academic research, literature review, and data analysis (PyTorch, OpenCV, NumPy, Pandas). Co-author at ACM DIS 2025. Currently pursuing an ongoing thesis on **Hybrid Quantum–Classical Neural Network for Audio Classification of Deepfake Detection**. Skilled in academic writing, referencing (APA/MLA/Chicago), and collaborative research. Seeking research assistantship opportunities contributing to data-driven publications, proposals, and interdisciplinary projects.

Education

BRAC University, Dhaka

2021–Expected - January 2026

Bachelor of Science in Computer Science

Thesis: **Hybrid Quantum–Classical Neural Network for Audio Classification of Deepfake Detection** (Supervisor: Dr. Jannatun Noor Mukta)

Relevant Coursework: AI, Data Structures, Quantum Computing, Algorithms, Ethical Hacking, Human–Computer Interface (HCI), Computer Vision

Electives:

- **CSE391: Programming for the Internet** - Self-project: Paperlords (Developed an online platform for students to access study materials)
- **CSE496: Ethical Hacking**
- **CSE472: Human–Computer Interface (HCI)**
- **CSE463: Computer Vision**
- **CSE471: System Analysis and Design**
- **CSE437: Data Science: Coding with Real World Data**

British Standard School, Dhaka

2019–2021

A Levels (CGPA: 4.00)

British Standard School, Dhaka

2017–2019

O Levels (CGPA: 3.29)

Professional Experience

Vice Chair (Volunteer)

IEEE BRACU Student Branch

January 2025–Present

- Leading branch operations and supporting strategic initiatives in academic and technical projects
- Coordinating collaborations with other student branches and research communities
- Facilitating meetings, supporting project documentation, and maintaining organized records

Former Chairperson (Volunteer)

IEEE Computer Society BRACU Student Branch Chapter

January 2024–December 2024

- Oversaw planning and execution of 8+ technical events, with emphasis on research presentations and paper writing

- Managed academic workshops on data-driven research, manuscript preparation, and proposal writing
- Coordinated collaborations with section and regional IEEE officers for joint research and technical projects

Publication Coordinator (Volunteer)

IEEE CS BDC Team SPARK

March 2023–Present

- Coordinated academic publications, including conference proceedings and newsletters
- Trained team members in referencing styles (APA/MLA/Chicago) and document formatting
- Supported IEEE conferences (COMPAS 2023 & 2024) through literature review and technical editing

Technical Writer (Volunteer)

Codersneed.com

May 2022–June 2023

- Authored technical tutorials on Python, combining practical coding with academic explanations
- Developed structured guides for learners, simulating research-style writing and citations

Content Writer (Paid)

TigerCart.com.bd

2020–2021

- Produced bilingual content and improved reader engagement through data-driven writing strategies

Ongoing Research

Deepfake Detection through Facial Thermal Imaging

(Independent Research)

- Built dataset from the IRIS Thermal/Visible Face Database; created 2,252 labelled samples (real vs. swapped) via InsightFace/ONNX and thermal mapping pipeline
- Conducted augmentation, early stopping, LR scheduling, and reported standard metrics (accuracy, precision, recall, F1)
- Preparing manuscript for peer-reviewed conference submission

Publications & Writing

Motivating the Margins: Inclusive Online Learning Design for Bangladeshi Students

Y B Arzoo, Tahsin Tasnim, Fabliha Akther Fairuz, Anika Priodorshinee Mrittika, and Jannatun Noor. “Motivating the Margins: Inclusive Online Learning Design for Bangladeshi Students.” *Proceedings of the 2025 ACM Designing Interactive Systems Conference (DIS '25)*. Association for Computing Machinery, New York, NY, USA, 2669–2683, 2025. doi:10.1145/3715336.3735838. *Full paper*.

Between Two Worlds: Youth Aspirations and Brain Drain in Bangladesh.

Global History Dialogues, Cambridge University, 2025. Analyzed youth migration motivations through oral histories and interviews; discussed policy implications for sustainable human capital development. Read Online.

Rohosshomoy Chirkut (The Domicile of Mystery)

Novel, Published in February 2021

Authored and published a detective novel available on major platforms

Written in Bangla, the novel showcases my passion for storytelling and creative writing

Available for purchase at Rokomari Bookstore

Projects

HashMurgi — Poultry Supply Chain Platform (Live)

Flask + HTML/Tailwind; role-based dashboards, batch tracking; structured datasets and versioned reports. *Second Runner-Up — CSE471 (BRAC University); recognized by BongoDev & Optimizely.*

Paperlords - Online Study Material Platform

Web Application GitHub Repository

- Developed an online platform providing students with easy access to study materials like booklets, question papers, and mark schemes
- Features include secure login, admin and user panels, resource management, cart system, and cash on delivery payment
- Built using HTML, CSS, JavaScript, PHP, and MySQL

PASTELCO - Custom Cake & Drink Experience

Web Application GitHub Repository

- Designed a web app that allows users to customize and order cakes and beverages online
- Utilized HTML, CSS, JavaScript for front-end, PHP for Backend, MySQL for database management

Geometry Dash Mini

Game Development

- Developed a minimalist rhythm-based platformer game using OpenGL and Python
- Utilized the 'glPoint()' function for rendering obstacles and player avatar
- Designed to provide players with a challenging, rhythm-driven gaming experience
- GitHub: GeoDash Mini

Soccer Bot

Robotics Project, BRAC University

- Developed a soccer-playing robot using Arduino Uno in a 2-month long robotics workshop
- Gained hands-on experience with sensors and motors

Certifications & Workshops

Qualitative Research Methods (Online Course)

Offered by the Centre for Research in the Arts, Social Sciences and Humanities (CRASSH), University of Cambridge

Course Overview: Introduced qualitative methodologies used by historians, sociologists, and anthropologists; built on “History of the World” foundations (global dynamics, primary-source interpretation, narrative mapping, connected online learning) to move learners from consumers to producers of knowledge.

Key Capabilities Developed: Analyzing diverse sources; creating oral history sources (permissions, ethics, interviewing best practices); creating visual history sources; using smartphones/electronic devices as research tools; building archives; research project design; structured peer feedback.

Instructor: Prof. Jeremy Adelman (Director—Global History Lab). *Statement of Accomplishment awarded to Y B Arzoo.*

Global History: Connecting the Past and the Present (Online Course)

Offered by BRAC University, Conducted by Cambridge University

Course Overview: This course explores the history of global connections and disconnections, from Chinggis Khan's conquests in the 13th century to reflections on globalization in the present day. It covers the economic, military, scientific, and cultural forces that have shaped the world over the past seven centuries. The course fosters global learning by connecting students from 22 locations around the world, sharing ideas, and co-creating knowledge about the global past.

Key Topics Covered: Peoples and Plunderers, Warfare and Motion, Clashing Worlds, Atlantic Worlds, Indian Ocean Worlds, Empire and Enlightenment, Global Frontiers, Civilization and its Discontents, Crisis and Globalization.

Basics of Robotics Workshop: Completed 2-month course; built a soccer-playing bot using Arduino

Awards & Honors

Second Runner-Up — CSE471: System Analysis and Design Project Demonstration,
BRAC University [August, 2025]

Built and demoed *HashMurgi*, a scalable Flask web platform (HTML, Tailwind CSS) for poultry logistics; recognition from BongoDev & Optimizely.

Best CS Student Volunteer Award (Honorable Mention) & Best Team Spark Presenter Award

IEEE Computer Society Bangladesh Chapter

Awarded during the Annual General Meeting and Award Ceremony 2025, held on January 24, 2025, at Bangladesh University of Business and Technology (BUBT).

Best CS Student Volunteer Award (Honorable Mention): Recognized for outstanding volunteer contributions to the IEEE Computer Society.

Best Team Spark Presenter Award: Awarded for delivering the best presentation as part of the IEEE Spark initiative.

Duke of Edinburgh's International Bronze Award

- Awarded for volunteer service and leadership activities.

Technical Skills

- **Research Tools:** Zotero, Mendeley, Google Scholar, JSTOR, Scopus
- **Data Analysis:** SPSS (basic), Excel, Python (NumPy, Pandas), R (beginner level)
- **ML/CV:** PyTorch, Torchvision, OpenCV, scikit-learn
- **Academic Writing:** APA, MLA, Chicago styles; manuscript editing
- **Web/General:** Python, SQL, JavaScript, PHP; Flask, Tailwind, Jinja; Git, GitHub, Linux

Languages

- English (Fluent)
- Bangla (Fluent)
- German (Intermediate)
- Japanese (Beginner)