S.M. ABRAR ZAWAD YOBORAJ

Curriculum Vitae

Dhaka, Bangladesh — abrarjawadalap@gmail.com — +880 1301 690420
smazy0210.tech — linkedin.com/in/smazy0210 — github.com/SMAZY0210

OBJECTIVE

Undergraduate student in Information and Communication Engineering at Bangladesh University of Professionals (BUP), seeking a research-oriented academic opportunity with a strong interest in computer vision, robotics, and intelligent autonomous systems. Experienced in full-stack development, embedded systems, and machine learning fundamentals. Motivated to engage in international research collaboration and advance skills in perception-driven and autonomous technologies.

EDUCATION

B.Sc. in Information and Communication Engineering (ICE) 2023 – 2027 (Expected)
Bangladesh University of Professionals (BUP), Dhaka, Bangladesh
CGPA: 3.35 / 4.00

TECHNICAL SKILLS

Programming Languages: C/C++, Python, Java, JavaScript, SQL

AI & Machine Learning: Pandas, NumPy, scikit-learn, TensorFlow, MATLAB, Data Analysis

Web & Backend: Flask, Django, Node.js, Express, React, MySQL, MongoDB

Embedded Systems: ESP32, Arduino, sensor integration, real-time control

Tools & Platforms: Git, GitHub, Docker, Linux, VS Code, Jupyter, n8n (Workflow Automation)

Core Competencies: OOP, Data Structures & Algorithms, REST API Design, PWA Development, System Design

PROJECTS

PoyshaGuni: Full-Stack Personal Finance PWA Live GitHub

- Built a production-grade Progressive Web App for personal finance tracking, featuring income/expense management, monthly budgets, savings goals, recurring transactions, and loan tracking with partial repayments.
- Designed a RESTful API backend using Node.js, Express, and MongoDB (Mongoose), with JWT authentication, bcrypt password hashing, rate limiting, and NoSQL injection protection via `express-mongo-sanitize`.
- Implemented a nightly cron job and on-demand trigger system for recurring transactions, ensuring balance accuracy without manual intervention.
- Built analytics features including spending heatmaps, category breakdowns, a six-month income vs. expense chart (Chart.js), and a forecast model based on recent activity.
- Delivered offline support via a service worker and web manifest (PWA), multi-currency display with Bangladeshi Taka support, and a dark/light theme system.
- *Stack:* Node.js, Express, MongoDB, Vanilla JS, Chart.js, HTML/CSS, JWT, node-cron

ObeTracker: Outcome-Based Education Tracking System Live GitHub

- Designed and built a role-based academic platform for Bangladesh University of Professionals to track and evaluate Outcome-Based Education (OBE) attainment across students, faculty, and admin.
- Implemented a binary attainment model with a 60% threshold, mapping Course Outcomes (COs) to Program Outcomes (POs) using weighted assessment scores across all linked assessments.
- Built a RESTful API backend with Node.js, Express, and Prisma ORM, with JWT-based role authentication and a seeded relational database.
- Delivered a no-build vanilla JS frontend with separate views and permissions for admin, faculty, and student roles.
- *Stack:* Node.js, Express, Prisma, SQL, Vanilla JS, JWT

Robokuber 5.0: Viva Management System, BUP Robotics Club GitHub

- Built a LAN-hosted web application to manage the BUP Robotics Club recruitment drive, supporting 121 participants and multiple independent panelists scoring candidates simultaneously.
- Implemented sector-based interview question banks, per-candidate scoring with notes and decisions (Selected / Hold / Rejected), and full CSV result export.
- Deployed live across a local network during the event with no external infrastructure, choosing the simplest effective stack for reliability under real conditions.
- *Stack:* Python, Flask, SQLite, HTML/CSS

Water-Clearing Robot: ESP32-Based Embedded Prototype

- Designed and built a low-cost robotic prototype targeting water contamination challenges, integrating hardware and software components for feasibility evaluation.

- Explored sensor-driven system design and laid the groundwork for future autonomous operation and scalable real-world deployment.
- *Stack:* ESP32, C++, embedded sensor systems

SoccerBot: Remote-Controlled Robotics System

- Built an ESP32-based mobile robot with wireless control capabilities, real-time motion handling, and custom control logic.
- Established a foundation for semi-autonomous control and real-time interaction in competitive robotics environments.
- *Stack:* ESP32, C++, wireless communication protocols

TicTacToe Multiplayer: Networked Java Application GitHub

- Developed a GUI-based multiplayer game using Java Swing and socket programming, applying object-oriented design and client-server communication for real-time gameplay.
- *Stack:* Java, Swing, Socket Programming

RESEARCH INTERESTS

Computer Vision • **Robotics & Autonomous Systems** • **Intelligent Perception**

- Interested in perception-driven systems that enable machines to interpret and respond to dynamic real-world environments.
- Actively exploring the intersection of embedded software and machine learning through hands-on robotics projects.
- Motivated to transition from foundational implementations toward research-oriented work in autonomous and intelligent systems.

CLUB & LEADERSHIP

BUP Robotics Club (BUPRC), Bangladesh University of Professionals

Assistant Joint Secretary, Technical 2025 – Present

- Led the organization of a national robotics competition hosted at BUP, overseeing logistics, participant outreach, and full technical event management.
- Conducted introductory robotics workshops for junior students, teaching embedded systems concepts and guiding first hands-on robot builds.
- Mentored beginners through practical robot development, fostering a culture of curiosity and applied problem-solving within the club.

General Member 2023 – 2025

- Participated in multiple national-level robotics competitions, gaining competitive experience in embedded systems design and real-time robot control.

CERTIFICATIONS & COURSEWORK

Completed coursework and online certifications in: Python, Data Science, Machine Learning, Cloud Computing, Git, NumPy, Pandas, Matplotlib, Web Scraping, and Workflow Automation (n8n).

ACTIVITIES

ICPC, International Collegiate Programming Contest 2023 – 2025

- Competed as part of a team across multiple ICPC rounds, tackling algorithmic challenges under time-constrained conditions.
- Strengthened skills in competitive programming, logical reasoning, and collaborative problem-solving.

Campus Ambassador: AUST, BRAC University, BUET, DUET

- Promoted academic events and competitions across four major universities, driving student participation and coordinating between organizing teams and university communities.

LANGUAGES

Bangla (Native) • English (Fluent) • Hindi (Fluent)

References available upon request.