Md. Ibrahim Sarker Raiyan

B.Sc. in Computer Science and Engineering | Researcher



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Education

- **Rajshahi University of Engineering & Technology (RUET)** — Rajshahi, Bangladesh
  B.Sc. in Computer Science and Engineering, CGPA: 3.84/4.00; Department Rank: 9th/181 — *Mar 2022 – Aug 2026*
- **Notre Dame College** — Dhaka, Bangladesh
  Higher Secondary Certificate (Science), GPA: 5.00/5.00 — *2018 – 2020*

Awards and Recognition

- **Technical Merit Scholarship, RUET:** Awarded in all four years of undergraduate study.
- **bdapps Innovation Summit 2025:** Top 10 finalist and 10th position as a member of the Barta/Khobor team.

Experience

- **Project Manager** — Feb 2025 – Present
  Barta Limited - Khobor: Swipe & Scroll — *Rajshahi, Bangladesh*
  - Lead a six-member cross-functional team and coordinate product planning, development, testing, and release activities for a digital short-news platform.
  - Contributed to the public launch of Khobor - Swipe & Scroll on Google Play.
  - Helped the team reach the Top 10 and secure 10th position at the bdapps Innovation Summit 2025.
- **Coordinator, Student Bioinformatics Research Team** — Dec 2024 – Present
  Student-led research group — *Research Coordinator and Peer Mentor*
  - Manage research schedules, task allocation, progress reviews, and collaborative cancer-bioinformatics projects.
  - Guided four peers through hub-gene identification workflows and supported six of ten team members in completing collaborative projects.
- **Industrial Attachment** — Mar 2025 – Apr 2025
  GizanTech — *Bangladesh*
  - Analysed client requirements and assisted with project-bidding and technical documentation.
  - Worked with Arduino, ESP32, and fingerprint sensors and co-developed a fingerprint-based attendance-system prototype.
  - Gained practical exposure to sprint management and CRM-based project-delivery workflows.

Research Publications

- **Identification of Potential Biomarkers in Acute Myeloid Leukemia Using Integrated Bioinformatics and Two-Step ML-Based Feature Selection Approaches**
  2025 IEEE International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), 2025. **First Author**. DOI
- **Identification of Potential Genomic Biomarkers in Pancreatic Cancer, Colon Cancer, and Ulcerative Colitis Using Integrated Machine Learning and Bioinformatics Approaches**
  2025 IEEE International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN), 2025. **First Author**. DOI
- **Identification of Hub Genes and Therapeutic Targets in Ovarian Serous Cystadenocarcinoma Using Machine Learning and Bioinformatics Approaches**
  2025 28th International Conference on Computer and Information Technology (ICCIT), 2025. **Co-author**. DOI

Undergraduate Thesis

- **Biomarker Identification in Pancreatic Cancer Using Two-Step Feature Selection and WGCNA** – *B.Sc. Thesis, 2025 – 2026*
  - Supervisor: Utsha Das, Assistant Professor, Department of CSE, RUET.
  - Developed an integrated workflow using differential expression analysis, mRMR, PLS-DA, machine-learning and deep-learning classifiers, WGCNA, PPI-network analysis, and biological validation.
  - Analysed pancreatic-cancer gene-expression datasets and evaluated models using accuracy, AUC, precision, recall, and F1-score.

Conference Presentations and Academic Activities

- **Paper Presenter, IEEE QPAIN 2025** *31 Jul – 2 Aug 2025*
  Bangladesh Army University of Science and Technology (BAUST), Saidpur, Bangladesh. Presented two first-author papers on machine-learning and bioinformatics-based biomarker identification and received presenter certificates.

Projects

AI, Machine Learning, and Bioinformatics Projects

- **Machine Learning-Based Traffic Prediction System** *May – Jul 2026*
  Three-member academic team; responsible for preprocessing, feature engineering, scaling, handwritten ANN implementation, and final integration.
  Built a next-hour traffic-prediction pipeline using historical junction data. Engineered temporal, lag, and rolling-window features and compared Linear Regression, Random Forest, and a handwritten Artificial Neural Network.
  Technologies: Python, NumPy, pandas, scikit-learn, Matplotlib
- **AML Gene Analysis and Biomarker Identification** *2024 – 2025*
  Collaborative research project; first author of the resulting IEEE conference paper.
  Analysed gene-expression data to identify potential AML biomarkers through differential-expression analysis, two-step ML-based feature selection, classification, and Cytoscape-based hub-gene/network analysis.
  Technologies: R, Python, GEO datasets, Cytoscape, machine-learning classifiers; GitHub

Software, Product, and Embedded Projects

- **Khobor - Swipe & Scroll** *Feb 2025 – Present*
  Six-member cross-functional product team; Project Manager.
  Developing and operating a mobile short-news platform featuring concise news summaries, Bangladesh and international coverage, multi-source aggregation, and text-to-audio support. Coordinate product requirements, feature priorities, testing, launch preparation, and team delivery.
  Technologies: Flutter, Supabase, Firebase, REST APIs, Vue/Vite admin panel; Play Store
- **Fingerprint-Based Attendance System** *Mar – Apr 2025*
  Team project completed during industrial attachment at GizanTech.
  Co-developed a biometric attendance prototype that identifies registered users through fingerprints and supports attendance recording, hardware integration, testing, and technical documentation.
  Technologies: Arduino, ESP32, fingerprint sensor
- **Real-Time Chat Application** *Apr 2024*
  Individual web-development project.
  Developed a browser-based chat application with user authentication, real-time message synchronisation, and user-management functionality.
  Technologies: ReactJS, Firebase Authentication, Cloud Firestore; GitHub

Technical Skills

- **Programming Languages:** Python, R, C, C++, Java, C#, Go, JavaScript, Dart
- **Research and Analysis:** Bioinformatics workflows, ML-based feature selection, gene-expression analysis, hub-gene identification, Cytoscape
- **Web and Mobile Development:** Flutter, ReactJS, Firebase, Supabase, REST APIs
- **Embedded and IoT:** Arduino, ESP32, fingerprint sensors
- **Tools:** Git, GitHub, LaTeX, Jupyter Notebook, Google Colab

Additional Information

- **Organisation:** Executive Member, RUET Analytical Programming Lab (RAPL), Mar 2022 – Present; support programming contests, workshops, peer collaboration, and technical-skill development activities.
- **Languages:** Bangla (Native); English (Professional working proficiency).

Competitive Programming

- Codeforces: 200+ problems; LeetCode; Vjudge: 90+ problems; CodeChef: 80+ problems.

References

- **Utsha Das** – *Undergraduate Thesis Supervisor*
  Assistant Professor, Department of CSE, RUET. Phone: +880-1826-526004; Email: utsha.das@cse.ruet.ac.bd; Faculty Profile.
- **Sakib Sarker** – *Research Mentor and Co-author*
  Lecturer, Department of CSE, Uttara University. Phone: +880-1783-882388; Email: sakib.sarker@uttarauniversity.edu.bd; Faculty Profile.
- **Prof. Dr. Md. Shahid Uz Zaman** – *Course Teacher and Department Head*
  Professor and Head, Department of CSE, RUET. Phone: +880-1707-006137; Email: szaman22.ruet@gmail.com; Department Profile.