

Tasfik Rahman

B.Sc. in Computer Science & Engineering · Prospective Graduate Student

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Research Interests

Machine learning and computer vision, with particular interest in deep learning for understanding human behavior and attention in visual scenes, including recognition, behavior prediction, and safety-critical applications such as intelligent transportation, as well as building reliable, scalable systems that bring such models into real-world use.

Education

Bachelor of Science in Computer Science and Engineering

| 2017 – 2021

Bangladesh University of Professionals (BUP), Dhaka, Bangladesh

- CGPA: **3.61 / 4.00**
- Undergraduate thesis: “Deep Convolutional Neural Network Based Biometric System Using Retinal Blood Vessel Segmentation” — supervised by [Dr. Md. Hasanul Kabir](#)

Publications

[1] **T. Rahman**, A. Anjum, R. Rahman, and R. R. Khan, “A Proposed Integrated System Towards Digitizing the Maternal Health and Children Support Process in Developing Countries,” in *Proc. 2019 IEEE International WIE Conference on Electrical and Computer Engineering (WIECON-ECE)*, Bangalore, India, Nov. 2019, pp. 1–4. (Presented in person.)

Professional Experience

Software Engineer — [MarginEdge](#), Arlington, VA, USA (Remote)

| Jan 2024 – Present

- Designed and shipped Spring Boot microservices that introduced credit card payments to 1,000+ restaurant clients, reaching 32% adoption within two quarters.
- Built event-driven services on AWS (Lambda, SQS, SNS, EventBridge, S3, CDK) handling ~42K transactions per day.
- Led a PostgreSQL-to-DynamoDB migration using an outbox pattern with auditing, reducing data-consistency incidents by 92%.
- Own services end to end — system design, testing (JUnit, high coverage bar), CI/CD, Kubernetes, and production monitoring (CloudWatch, Prometheus, Grafana).

Backend Engineer (Freelance) — [Toptal](#)

| Jul 2026 – Present

- Vetted member of the Toptal network, delivering backend solutions for international clients with Java, Spring Boot, and AWS.

Associate Software Engineer — [DSi](#), Dhaka

| Nov 2022 – Dec 2023

- Built Spring Boot services for a UNICEF-supported national education platform serving 20M+ students and 800K+ teachers (REST, PostgreSQL, JPA, Liquibase, RabbitMQ).
- Created reusable React/Redux UI components to keep the application’s design consistent.

Full-Stack Engineer — [DSi](#), Dhaka

| May 2021 – Nov 2022

- Built CI/CD pipelines with Docker, Kubernetes, Helm, and Jenkins, shortening release cycles from weekly to daily.
- Built distributed storage for Kubernetes workloads (Longhorn, GlusterFS, MinIO) and centralized logging and monitoring (ELK, Prometheus, Grafana), achieving 99.9% data availability.

Database Administration Intern — [Trust Bank Ltd.](#), Dhaka

| Dec 2019 – Jan 2020

- Automated SQL Server backup and recovery across 27 databases (33 SQL Server Agent jobs, 500+ GB of data), with tested restores completing in roughly 15–30 minutes.

Research Experience & Academic Projects

Retinal Biometric Identification with Deep CNNs — Undergraduate Thesis

| 2020 – 2021

Department of CSE, MIST · Supervisor: Dr. Md. Hasanul Kabir

- Developed a biometric system on retinal fundus images: segmented retinal blood vessels with a convolutional neural network and identified individuals by matching features extracted from the vessel maps.
- Tools: Python, TensorFlow, Keras, Jupyter Notebook; thesis written in LaTeX.

COVID-19 Detection from Chest X-Rays using CNNs

| 2020

- Built a CNN classifier (5 convolutional, 4 max-pooling, 4 dropout layers) using positive cases from the iee8023 COVID chest X-ray dataset and negatives from a Kaggle pneumonia chest X-ray dataset.
- Deployed the model behind a Flask web application for image upload and prediction.

Maternal Health and Child Support System

| 2019

- Designed a platform to record maternal health data and provide guidance through the perinatal period, grounded in field data collected from 30+ families; basis of publication [1].
- Stack: Oracle Database, Node.js, Express, HTML5, CSS3, Bootstrap.

EI-Disinfecto — Autonomous UV-C Disinfection Robot - [link](#)

- Built a robot that navigates autonomously using sonar sensors, with remote control via Raspberry Pi and Firebase and a ReactJS web interface.

Teaching, Mentoring & Service

Student Mentor (2019 – 2021) & Secretary — MIST Computer Club

| Mar 2019 – Apr 2021

- Taught programming classes in C and C++ to 100+ undergraduate students.
- Problem setter for MIST CODEWAR 2020; organizer of the National Collegiate Programming Contest (NCPC) 2019 hosted at MIST.
- As Secretary, organized programming contests and technical events for the student body.

Honours & Awards

- [Facebook Hackathon 2020](#) — 3rd place globally among 2,700+ teams (2020)
- [ICPC Dhaka Regional](#) — ranked in the top 100 of 1,300+ teams (2021)
- [CodeChef CookOff \(November\)](#) — country rank 20, global rank 336 (2020)
- [Hacktoberfest](#) — contributions merged into four open-source projects (2020)
- [Google Code Jam 2019](#) Qualifier Round

Technical Skills

ML & Research: Python, TensorFlow, Keras, Jupyter Notebook, LaTeX

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

Systems: Spring Boot, microservices, event-driven architecture, REST APIs, React, Node.js

Data: PostgreSQL, DynamoDB, Redis, SQL Server

Cloud & DevOps: AWS (Lambda, S3, SQS, SNS, EventBridge, CDK), Docker, Kubernetes, Helm, Jenkins, Grafana

Spoken languages: English (professional working proficiency) · Bengali (native) · Hindi (native / bilingual)