

Anamul Hoque Emtiaj

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EDUCATION

Bangladesh University of Engineering and Technology (BUET)

B.Sc. in Computer Science and Engineering; CGPA: 3.78/4.00

Dhaka, Bangladesh

Feb 2020 – Feb 2025

SKILLS

Languages: C, C++, Java, Python, JavaScript, Assembly, Bash

Frameworks & Libraries: Django, Django REST Framework, Next.js, Celery, PyTorch, TensorFlow, scikit-learn

DataBase: Oracle, PostgreSQL, MySQL, Django ORM, Redis

Tools & Clouds: Git, Github, Docker, Azure, DigitalOcean, cPanel

PROJECTS

Learning Management System (LMS) | Django REST Framework, PostgreSQL, Next.js Ongoing

- Developing a scalable LMS for [Med-Sparkle](#), focusing on video-based courses, mock tests, subscription services, real-time updates via WebSockets, and a comprehensive admin interface for instructors.
- My role involves designing and implementing the entire backend, managing asynchronous tasks with Celery and Redis, integrating Vimeo and YouTube as video servers, and Implementing backend-relevant frontend functionalities, including WebSocket integration, user authentication, and video API connections.
- Handling full deployment using Docker on DigitalOcean, with Nginx and Gunicorn configured for optimized web performance.

Personal Websites | Django, MySQL, bootstrap, jQuery | [Link1](#) | [Link2](#) Jul 2024

- Built and deployed two personal websites for clients as part of paid contractual projects.
- Deployed on shared hosting using cPanel, Apache, and mod-wsgi to deliver cost-effective and efficient solutions.

Tensor Insight Training System | Django Rest Framework, PostgreSQL, React JS | [GitHub](#) Feb 2024

- Developed a web application to facilitate learning and practicing tensor manipulation through interactive puzzle-solving exercises.
- Deployed the application using Azure Kubernetes Service (AKS), Azure Container Registry (ACR), and Azure Storage Account, with a CI/CD pipeline implemented via GitHub Actions

Tontu | Django, Django Templates, bootstrap, jQuery | [Link](#) Jun 2023

- Created an e-commerce site prototype as part of the Hult Prize 2023 competition.
- Deployed the application on PythonAnywhere.

THESIS

CRISPR Off-Target Prediction and Optimization | Thesis

Dec 2023– Present

Supervisor: [Dr. M. Sohel Rahman](#)

- Conducting research on CRISPR-Cas9 gene-editing technology, focusing on predicting off-target effects and optimizing guide RNA using advanced deep learning techniques.
- Worked with various architectures, including CNNs, RNNs, LSTMs, GRUs, Transformers, Self-Attention mechanisms, and language models like BERT, as well as explainability tools such as DeepSHAP and Integrated Gradients.
- Achieved superior performance(2% to 8%) compared to recent state-of-the-art studies in key metrics such as PR-AUC and F1 score and initiated manuscript preparation for journal submission.

AWARDS & ACHIEVEMENTS

Research Grant: Recipient of the 'Research and Innovation Center for Science and Engineering - RISE, BUET' Students' Research Grant, awarded to our thesis group in recognition of our research endeavors.

Hult Prize: Hult Prize 2023 On-Campus Champion and Regional Round Participant (Milan Summit).

CERTIFICATIONS

Data Structures and Algorithms | [GitHub](#)

Nov 2021

Completed a paid course on Data Structures and Algorithms from Bohubrihi.