Meheraj Hasan

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Professional Summary

My academic achievements and project work reflect strong punctuality, dedication, and a results-driven mindset. I contribute by developing scalable software applications and intelligent systems using Machine Learning, Deep Learning, and modern development technologies such as .NET, PHP, and Flutter. With experience in software testing and quality assurance, I focus on delivering reliable and efficient solutions. I am passionate about continuous learning and committed to adding value through innovation, teamwork, and problem solving.

Education

B.Sc. in Computer Science and Engineering *Sept 2022 – Present*
American International University-Bangladesh

- CGPA: 3.99/4.00; Completed Credit: 135/148
- Major in Information Systems

Higher Secondary Certificate *2020*
Hazi Misir Ali College

- GPA: 5.00/5.00

Secondary School Certificate *2018*
Pagla High School

- GPA: 5.00/5.00
- Talentpool scholarship.

Experience

Research Intern Jan 2026 – Present
Advanced Machine Intelligence Research Lab (AMIR Lab)
Supervisor: Prof. Dr. Muhammad Firoz Mridha

- Conducted research on advanced machine intelligence and deep learning methodologies.
- Worked on computer vision, neural network and large language model architectures for real-world research problems.
- Collaborated with researchers on experimental design, model evaluation, and result analysis.
- Participated in lab meetings, research discussions, and technical workshops.

Publications

DINO-MIL: An ROI-Based Feature Embedding Framework for Multiple Instance Learning in Breast Mass Classification *2026*
2026 IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking (QPAIN 2026
doi.upcoming.org/#

BrainConv: CBAM-Enhanced ConvNeXt for Multi-Class Brain Tumor Classification *2026*
International Conference on Electrical, Computer and Communication Technologies (ECCT 2026)
doi.upcoming.org/#

Detection and Classification of Diabetic Retinopathy Using EfficientNetB0: A Lightweight Model With Transfer Learning Approach *2025*
2025 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT 2025)
doi.upcoming.org/#

Certifications

Artificial Intelligence & Machine Learning Fundamentals *November 2025*
Grameenphone Academy
Certificate Verification Link

Neural Networks and Deep Learning *September 2025*
Coursera | DeepLearning.AI
Certificate Verification Link

NumPy for Data Science – Real-Time Coding Exercises *September 2025*
Udemy
Certificate Verification Link

Supervised Machine Learning: Regression and Classification *September 2025*
Coursera | DeepLearning.AI
Certificate Verification Link

Quality Assurance and Software Testing *January 2025*
Enhanced Digital Government & Economy Project (EDGE)
Certificate Verification Link

Introduction to C# Programming and Unity *January 2024*
Coursera | University of Colorado
Certificate Verification Link

Research Projects

Water Drinkability Prediction System *Live — GitHub*

- Developed an end-to-end machine learning system to predict drinking water safety using physicochemical features.
- Deployed the trained model as a public web app using Gradio and Hugging Face Spaces.
- Tech stack: Python, Pandas, NumPy, Scikit-learn, Gradio, Hugging Face.

Real-Time Face Recognition System *github.com/face-recog*

- Developed a real-time face recognition system using deep learning and transfer learning techniques.
- Implemented automated face extraction using Haar Cascade with ROI selection and image resizing.
- Integrated OpenCV webcam inference with confidence-based prediction and unknown face handling.
- Tech stack: Python, TensorFlow, Keras, OpenCV, MobileNetV2, NumPy, Matplotlib.

Real-Time Handwritten Digit Recognition System *github.com/Digit*

- Developed a real-time handwritten digit recognition system using the MNIST dataset and deep neural networks.
- Implemented image preprocessing including grayscale conversion, thresholding, contour detection, and ROI extraction.
- Integrated OpenCV webcam input for live digit detection with prediction confidence display.
- Tech stack: Python, TensorFlow, Keras, OpenCV, NumPy, Matplotlib.

Development Projects

TravelEaseV2 — Unified Ticket Booking System *github.com/TravelEaseV2*

- Designed and developed a backend-focused ticket booking system using ASP.NET Core Web API.
- Implemented RESTful APIs following clean 3-tier architecture (API, BLL, DAL).
- Built complete booking workflow including seat reservation, availability checking, and booking status management.
- Implemented payment processing with fare calculation, discount rules, and payment validation.
- Applied repository pattern, service layer abstraction, and AutoMapper for clean code separation.
- Implemented JWT-based authentication and role-based authorization.
- Tech stack: ASP.NET Core Web API, C#, Entity Framework Core, SQL Server, JWT, AutoMapper.

MoneyMap — Personal Finance Tracker *github.com/MoneyMap*

- Built a full-stack web application for tracking income, expenses, debts, savings, and financial goals.
- Implemented user authentication and state management using sessions and cookies.

- Developed asynchronous data handling using AJAX and JSON for seamless user interaction.
- Generated real-time interactive financial charts, analytics dashboards, and automated reports.
- Tech stack: HTML, CSS, JavaScript, PHP, MySQL, AJAX, JSON.

Scenic — Seasonal Visualization of Bangladesh *github.com/Scenic*

- Designed an interactive OpenGL-based graphics project showcasing seasonal transitions of Bangladesh.
- Implemented real-time weather effects, day–night cycles, lighting controls, and animations.
- Tech stack: OpenGL, GLUT, C++, Git.

TravelEase — Unified Ticket Booking System *github.com/TravelEase*

- Developed a centralized ticket booking system for buses, trains, airplanes, and launches.
- Supports user registration, ticket purchasing, vehicle owner management, and customer support workflows.
- Tech stack: C#, Windows Forms, Microsoft SQL Server.

Technical Skills

Programming Languages: Python, C#, Dart

Deep Learning & Computer Vision: CNNs, Transfer Learning, Vision Transformers, Feature Engineering

NLP & LLM Foundations: Text Preprocessing, Tokenization, Embeddings, Transformer Models, Attention Mechanism

Data Analysis & ML Frameworks: NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow/Keras, Exploratory Data Analysis (EDA)

Software Development: ASP.NET MVC, ASP.NET Core Web API, Windows Forms, Flutter, PHP, HTML, CSS, JavaScript

Software Quality Assurance (SQA): Manual Testing, Test Case Design, Bug Reporting, Jira, Selenium, API Testing (Postman)

Databases: MySQL, SQL Server

Web Scraping & Automation: BeautifulSoup, Selenium

Tools & Simulation: MATLAB, Multisim, AutoCAD, Overleaf

Achievements & Awards

Honorable Dean's Award (3 times)

Received the Honorable Dean's Award three times from the Faculty of Science and Technology, American International University–Bangladesh, in recognition of outstanding academic performance.

Scholarships

- Awarded 80% Merit-Based Scholarship at AIUB for outstanding academic performance.
- Received Talentpool Scholarship in both JSC and SSC examinations.
- Secured 1st Position in Upazilla in the JSC examination.

Runner-up — AI-Reinventing Campus Connect Workshop

Secured the Runner-up position at the AI-Reinventing Campus Connect Workshop organized by Google Cloud (November 2025), recognizing innovative application of artificial intelligence concepts in a competitive academic setting.

Co-curricular Activities

Research Member *2025 – Present*

AIUB Research and Development Club

Actively participated in technical workshops and collaborative research projects focused on modern software development technologies, data-driven systems, and applied computing methodologies.

References

Dr. Khandaker Tabin Hasan
Professor, Department Head [Graduate Program]
Department of CSE
American International University-Bangladesh (AIUB)
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