Fatema Tuj Johora Faria

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Research Interests

Large Language Models, Large Multimodal Models, LLM Agents, Multimodal AI Agents, Human–Computer Interaction, AI in Healthcare, NLP for Social Good, NLP for Low-Resource Languages, Vision-Language Models, Trustworthy AI & Computer Vision.

Education

B. Sc. in Computer Science and Engineering — *July 2019 – December 2023*
Ahsanullah University of Science and Technology (AUST) — *Dhaka, Bangladesh*

Undergraduate Thesis Title: *Generative Adversarial Networks for Crop Disease: A Case Study with Potato Disease Classification and Instance Segmentation*
Supervisor: *Dr. Mohammad Shafiul Alam, Professor, Department of CSE, AUST*
Co-supervisor: *Khan Md Hasib, Assistant Professor, Department of CSE, Bangladesh University of Business and Technology*
CGPA: *3.302 (Ranked 84th out of 145 students)* **Transcript**

Research Experience

Remote Research Assistant — *June 2024 – Present*
Supervisor: *Dr. Laith H. Baniata, Research Professor, Gachon University, South Korea*

- Led research on ***"Towards Robust Chain-of-Thought Prompting with Self-Consistency for Remote Sensing VQA: An Empirical Study Across Large Multimodal Models"***. *Supported by the National Research Foundation of Korea (Grant No. NRF-2022R1A2C1005316), funded by the Ministry of Science and ICT.*
  - Proposed *Zero-GeoVision*, a zero-shot remote sensing framework employing LMMs (GPT-4o, Grok 3, Gemini 2.5 Pro, Claude 3.7 Sonnet) to interpret high spatial resolution (HSR) satellite images and answer six task-specific questions.
  - Designed *CoT-GeoReason*, a chain-of-thought extension of *Zero-GeoVision*, guiding LMMs to produce step-by-step reasoning before final answers using controlled decoding parameters to enable complex reasoning.
  - Developed *Self-GeoSense*, built on *CoT-GeoReason* by generating five independent CoT reasoning paths per input, aggregating answers via majority voting to improve consistency in remote sensing interpretation.
  - Implemented *Geo-Judge*, a two-stage evaluation framework for generative remote sensing VQA (Stage 1: automatic LMM-based labeling; Stage 2: human-in-the-loop review with feedback on model reasoning and predictions).
- Investigated research on ***"Analyzing Diagnostic Reasoning of Vision-Language Models via Zero-Shot Chain-of-Thought Prompting in Medical Visual Question Answering"***. *Funded by the National Institute of Health, South Korea (Project No. 2024ER080300), and the National Research Foundation of Korea.*
  - Evaluated Large Vision-Language Models (Gemini 2.5 Pro, Claude 3.5 Sonnet, GPT-4o Mini) on the PMC-VQA benchmark, identifying limitations of zero-shot learning (ZSL), which often produced hallucinated answers to multiple-choice radiology questions due to insufficient clinical decision-making transparency.
  - Proposed a Zero-shot Chain-of-Thought (Zero-CoT) prompting framework to enable multi-step diagnostic reasoning by decomposing problems, analyzing visual and contextual cues, and generating stepwise explanations, achieving a 41.68% accuracy improvement over existing models.
- Carried out research on ***"SentimentFormer: A Transformer-Based Multi-Modal Fusion Framework for Enhanced Sentiment Analysis of Memes in the Under-Resourced Bangla Language"***. *Supported by the Basic Science Research Program through the National Research Foundation of Korea (NRF), funded by the Ministry of Science and ICT under Grant No. NRF-2022R1A2C1005316.*
  - Implemented the *SentimentFormer* framework by fusing SwiftFormer's visual features with mBERT's textual embeddings at an intermediate layer, which enhanced cross-modal interactions and improved the Weighted F1 Score from 64.3 to 73.28, surpassing all previously reported research baselines on the MemoSen dataset.
- Conducted research on ***"Investigating the Predominance of Large Language Models in Low-Resource Bangla Language Over Transformer Models for Hate Speech Detection: A Comparative Analysis"***. *Supported by the Basic Science Research Program through the National Research Foundation of Korea (NRF), funded by the Ministry of Science and ICT under Grant No. NRF-2022R1A2C1005316.*
  - Applied Zero-Shot and Few-Shot Learning approaches (5-shot, 10-shot, and 15-shot) using proprietary LLMs (GPT-3.5 Turbo and Gemini 1.5 Pro) for low-resource Bengali hate speech detection and improved accuracy by 6.28% over prior approaches across three datasets: BD-SHS, Bengali Hate Speech Dataset, and Bengali Hate Dataset.

Publications (* denotes equal contribution) [100+ citations]

Journals

- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Busra Kamal Rafa, Swarnajit Saha, Md. Mahfuzur Rahman, Khan Md Hasib, and M. F. Mridha. (2025). **"BanglaCalamityMMD: A Comprehensive Benchmark Dataset for Multimodal Disaster Identification in the Low-Resource Bangla Language,"** *International Journal of Disaster Risk Reduction, 130*, 105800. https://doi.org/10.1016/j.ijdrr.2025.105800 **(Elsevier, Q1, IF: 4.5)**
- **Fatema Tuj Johora Faria**, Laith H. Baniata, Ahyoung Choi, and Sangwoo Kang. **"Towards Robust Chain-of-Thought Prompting with Self-Consistency for Remote Sensing VQA: An Empirical Study Across Large Multimodal Models,"** *Mathematics* 2025; 13(18):3046. https://www.mdpi.com/2227-7390/13/18/3046 **(MDPI, Q1, IF: 2.2)**

- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Zayeed Hasan, Md. Arafat Alam Khandaker, Niful Islam, Khan Md Hasib, and M.F. Mridha. 2025. **"MultiBanFakeDetect: Integrating Advanced Fusion Techniques for Multimodal Detection of Bangla Fake News in Under-Resourced Contexts,"** *International Journal of Information Management Data Insights*, 5 (2): 100347. https://doi.org/10.1016/j.jjimei.2025.100347 **(Elsevier, Q1, IF: 15.53)**
- **Fatema Tuj Johora Faria**, Laith H. Baniata, Ahyoung Choi, and Sangwoo Kang. **"Analyzing Diagnostic Reasoning of Vision–Language Models via Zero-Shot Chain-of-Thought Prompting in Medical Visual Question Answering,"** *Mathematics*. 2025; 13(14):2322. https://doi.org/10.3390/math13142322 **(MDPI, Q1, IF: 2.2)**
- **Fatema Tuj Johora Faria**, Laith H. Baniata, Mohammad H. Baniata, Mohannad A. Khair, Ahmed Ibrahim Bani Ata, Chayut Bunterngchit, and Sangwoo Kang. 2025. **"SentimentFormer: A Transformer-Based Multimodal Fusion Framework for Enhanced Sentiment Analysis of Memes in Under-Resourced Bangla Language,"** *Electronics* 14, no. 4: 799. https://doi.org/10.3390/electronics14040799. **(MDPI, Q2, IF: 2.6)**
- **Fatema Tuj Johora Faria**, Laith H. Baniata, and Sangwoo Kang. **"Investigating the Predominance of Large Language Models in Low-Resource Bangla Language over Transformer Models for Hate Speech Detection: A Comparative Analysis,"** *Mathematics* 2024, 12, 3687. https://doi.org/10.3390/math12233687. **(MDPI, Q1, IF: 2.2)**
- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Md. Mahfuzur Rahman, Khan Md Hasib, Md. Jakir Hossen, and M. F. Mridha. **"MindSpeak-Bangla: A Human–LLM Collaborative Dataset for Chain-of-Thought Adaptation in Bangla Mental Health Advice Generation."** **[Under Review in AI Magazine]** **(Wiley, Q2, IF: 3.2)**
- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Ahmed Al Wase, Mehidi Ahmmed, Md Rabius Sani, and Tashreef Muhammad. **"Vashantor: a large-scale multilingual benchmark dataset for automated translation of Bangla regional dialects to Bangla language,"** arXiv preprint arXiv:2311.11142 (2023). **[Under Review in Array]** **(Elsevier, Q1, IF: 4.5)** **Preprint**
- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Pronay Debnath, Asif Iftekher Fahim, and Faisal Muhammad Shah. **"Explainable Convolutional Neural Networks for Retinal Fundus Classification and Cutting-Edge Segmentation Models for Retinal Blood Vessels from Fundus Images,"** arXiv preprint arXiv:2405.07338 (2024).
[Under Review in Journal of Visual Communication and Image Representation] **(Elsevier, Q1, IF: 3.1)** **Preprint**

Conference Proceedings

- **Fatema Tuj Johora Faria**, Moin, M. B., Fahim, A. I., Debnath, P., & Shah, F. M. (2025)., **"Unraveling the Dominance of Large Language Models Over Transformer Models for Bangla Natural Language Inference: A Comprehensive Study,"** *Proceedings of Fourth International Conference on Computing and Communication Networks. ICCCN 2024. Lecture Notes in Networks and Systems* (Vol. 1396). Springer, Singapore. doi: 10.1007/978-981-96-6124-4_2.
- **Fatema Tuj Johora Faria**, M. B. Moin, M. M. Rahman, M. M. A. Shanto, A. I. Fahim, & M. M. Hoque. **"Uddessho: An Extensive Benchmark Dataset for Multimodal Author Intent Classification in Low-Resource Bangla Language,"** *Proceedings of International Conference on Information Technology and Applications (ICITA 2024)*, Lecture Notes in Networks and Systems, vol. 1248, Springer, Singapore, 2025. doi: 10.1007/978-981-96-1758-6_32.
- Moin, M. B., **Fatema Tuj Johora Faria**, Saha, S., Rafa, B. K., Alam, M. S. (2025). **"Exploring Explainable AI Techniques for Improved Interpretability in Lung and Colon Cancer Classification,"** *Proceedings of Fourth International Conference on Computing and Communication Networks. ICCCN 2024. Lecture Notes in Networks and Systems*, vol 1396. Springer, Singapore. doi: 10.1007/978-981-96-6124-4_1.
- **Fatema Tuj Johora Faria***, Mukaffi Bin Moin*, Rabeya Islam Mumu, Md Mahabubul Alam Abir, Abrar Nawar Alfy, and Mohammad Shafiul Alam., **"Motamot: A Dataset for Revealing the Supremacy of Large Language Models Over Transformer Models in Bengali Political Sentiment Analysis,"** *2024 IEEE Region 10 Symposium (TENSYMP)*, New Delhi, India, 2024, pp. 1-8, doi: 10.1109/TENSYMP61132.2024.10752197.
- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Ahmed Al Wase, Md Rabius Sani, Khan Md Hasib, and Mohammad Shafiul Alam. **"Classification of potato disease with digital image processing technique: a hybrid deep learning framework,"** *2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC)*, Las Vegas, NV, USA, 2023, pp. 0820-0826, doi: 10.1109/CCWC57344.2023.10099162.
- **Fatema Tuj Johora Faria***, Mukaffi Bin Moin*, Mohammad Shafiul Alam*, Ahmed Al Wase, Md Rabius Sani, and Khan Md Hasib. **"PotatoGANs: Utilizing Generative Adversarial Networks, Instance Segmentation, and Explainable AI for Enhanced Potato Disease Identification and Classification,"** arXiv preprint arXiv:2405.07332 (2024).
[Accepted for presentation and publication at IEEE i-COSTE 2025] **Preprint**
- **Fatema Tuj Johora Faria**, Mukaffi Bin Moin, Asif Iftekher Fahim, Pronay Debnath, and Faisal Muhammad Shah. **"Bangla MemeEvidence: A Multimodal Benchmark Dataset for Explanatory Evidence Detection in Bengali Memes."**
[Under Review in 2025 9th International Conference on Vision, Image and Signal Processing]

Work Experience

Astha.IT — *November 2025 – Present*
AI Engineer II — *Dhaka, Bangladesh*

- **Toby (Code Name): Adaptive AI HR Assistant within the AIT360 Ecosystem (Ongoing)**
  - Implemented a Job Description Builder Agent with human-in-the-loop workflows that enable real-time JD review, enhancement, and final version approval.
  - Designed multiple user-focused interfaces, including a Job Description Generator, a dashboard for tracking draft reviews, an HR feedback editor for refining drafts, and a custom candidate application form.
  - Built a session-based system to store submissions and AI drafts, letting HR resume or delete work anytime.
  Tech Stack Used: Python, PostgreSQL, LangGraph, LangChain, OpenAI, AWS, FastAPI, React, TypeScript, Tailwind CSS

Dexian (Bangladesh) Limited. *July 2025 – October 2025*
Senior Application Developer *Dhaka, Bangladesh*

- **Conversational AI Agent Platform for Large-Scale Document Interaction: ShareFlow Agent** ▶ **Project Demo**
  - Constructed and deployed a ReAct-based Agentic RAG system integrated with Microsoft SharePoint to retrieve information from selected files across resource pages, along with functionality for processing user-uploaded documents, incorporating custom guardrails that enable users to build personalized agents.
  - Orchestrated a multimodal OCR agent with a custom toolset for autonomous content extraction from diverse unstructured sources (scanned PDFs, images, DOCX files, flowcharts, tables, and diagrams), incorporating resilient fallback strategies and controlled retry mechanisms with rate limiting to ensure fault-tolerant performance.
  - Integrated a Web Browser Agent that scrapes real-time data from websites to augment RAG responses with current and context-specific information based on user instructions and descriptions.
  - Implemented session-based chat with full history retention for context-aware interactions and a reset option, and integrated it with Microsoft Bot Framework to enable interactive conversations within Microsoft Teams.
  - Enabled users to input up to six leading questions to facilitate interactions, and automatically generated at least three questions based on the agent's instructions and description if the user provided none or fewer.
  - Built an update feature that allows users to modify existing agents by adding or deleting files, editing leading questions, and revising instructions and descriptions, along with a real-time file tracking system on the SharePoint site that synchronizes with the agent's memory.
  - Designed an agent-sharing functionality enabling users to share agents publicly with all app users, with individual users, or privately with groups, with automated email notifications to keep collaborators informed.
  - Took leadership of the project while guiding and supporting junior application developers in system design, promoting their technical growth, and upholding high standards of code quality and overall team output.
  - Achieved ~63% yearly operational cost reduction by optimizing custom agent usage for 80 *Sales Managers* handling 50+ interactions per day, replacing the existing SharePoint Agent (Microsoft 365 Copilot Agent).
  - Optimized RAG query accuracy by 96%, reduced token costs by 42%, and enabled users to upload or select up to 50 files per agent, surpassing Microsoft Copilot's 20-file limit.
    Tech Stack Used: Python, LlamaIndex, LangChain, Azure OpenAI (GPT-4.1, GPT-4o, text-embedding-3-large), Azure Bot Services, Azure SQL, Azure Functions, AlloyDB for PostgreSQL (pgvector), Azure App Service, React, FastAPI, Ragas

Dexian (Bangladesh) Limited. *May 2024 – June 2025*
Application Developer *Dhaka, Bangladesh*

- **Organizational Intelligence Role Placement System: Org Info** ▶ **Project Demo**
  - Implemented a multimodal agent to extract organizational hierarchy from organograms using tree-of-thought (ToT) prompting, incorporating multipath reasoning and Breadth-First Search (BFS) to ensure accurate role placement, and storing the hierarchy in a database after cross-checking with existing data and mapping it to Bullhorn records.
  - Designed an LLM-based agent that converts natural language queries into optimized SQL (text-to-SQL) using chain-of-thought (CoT) with self-consistency prompting, retrieves relevant organizational data, and integrates the results into the "OrgChart front-end framework" for hierarchical visualization.
  - Engineered a dynamic LLM-based agentic RAG-guided chat interface called "OrgInfo Assistant" that allowed users to interact with specific organizational hierarchies using predefined query types, specialized roles, and goals, where user queries were first converted to SQL (text-to-SQL), executed on a temporary organization-specific database, and the retrieved results were converted to natural language (SQL-to-text).
  - Developed a 7-day summarization of organizational activities by extracting relevant notes on placements, submissions, and communication logs from the Bullhorn database, and set up scheduled jobs to update a SQL database every 7 days with new and updated organizational data.
  - Applied object-oriented software design patterns such as Singleton and Builder to achieve modular architecture, enhance code reusability, and maintain scalable system design across agent workflows and backend services.
  - Deployed and optimized organizational hierarchy search for *Account Managers* by eliminating full Bullhorn database queries, reducing search time by 92%, and enabling faster access to relevant data.
    Tech Stack Used: Python, LangChain, LangGraph, Azure OpenAI (GPT-4.1, GPT-4o-Mini, text-embedding-3-small), Prompt Engineering, Azure SQL, Azure App Service, OpenCV, React, FastAPI, WebSocket, Docker
- **Next-Gen Proposal Insights Automation Engine: RFPMatcher** ▶ **Project Demo**
  - Architected a RAG solution utilizing a temporary vector database and Chain-of-Thought prompting with 12 specialized analytical prompts to systematically extract key information, such as client details, scope of work, deliverables, and submission timelines, from Request for Proposal (RFP) documents.
  - Orchestrated a comprehensive master database by processing historical Request for Proposal (RFP) responses using 38+ predefined questions (23 deliverable-focused and 15 experience-based), incorporating metadata such as detailed generated answers, chunk summaries, manual classification of RFP responses (winning or losing), and question categories (Deliverables or Experience), while storing vector embeddings to enable semantic search capabilities.
  - Designed a Past Experience Matcher system that analyzes new RFP documents by dynamically extracting three key requirements (core client needs or expectations), generates both binary questions (Yes/No — whether the company has handled similar situations before) and descriptive questions (open-ended questions to explore how the company addressed similar challenges or implemented solutions) for each chunk, then queries a master database, performs semantic similarity matching to identify relevant past experiences.

- Developed a Table of Contents (TOC) generation pipeline that analyzes extracted RFP key information against predefined section libraries (10 standard and 12 non-standard sections), employing GPT-4 to intelligently select and prioritize relevant sections based on project requirements.
- Implemented a section-based conversational AI platform that generates initial content for each TOC section using extracted key information and past experience data, and enables iterative refinement through targeted chat interactions where users can request modifications, while maintaining conversation history.
- Applied a set of evaluation metrics (Contextual Precision, Contextual Recall, Response Relevancy, Faithfulness, and Factual Correctness) to measure the overall performance of the RAG application on custom-created gold standard datasets for key information extraction and past experience matching.
- Reduced manual review time for 100+ pages by 3–5 days and accelerated decision-making through automated extraction and predictive insights, enabling *Proposal Managers* to focus on strategic bid development.
  Tech Stack Used: Python, LlamaIndex, Azure OpenAI (GPT-3.5 Turbo, GPT-4, text-embedding-3-large), Prompt Engineering, AlloyDB for PostgreSQL (pgvector), CouchDB, Azure App Service, React, FastAPI, DeepEval, Docker

- **Smart Recruitment Analytics Tool: AgentDexi**
  - Formulated a RAG system to identify technological trends and track the top 20 most in-demand skills by extracting information from job descriptions scraped from external company postings.
  - Orchestrated a web Research Agent that autonomously performs web searches using the Google Search API and Tavily Search API to extract company information from diverse sources, retrieving the top 10 ranked URLs with contextual preview summaries and filtering results based on relevance to support downstream data extraction and analysis tasks.
  - Implemented a Website Scraping Agent utilizing ScraperAPI to extract targeted data from discovered URLs, processing raw HTML/text content into structured data, and built a custom RAG pipeline that filters contextually relevant information and generates structured outputs, including tables, organizational reports, and business intelligence summaries.
  - Built a Transcript Agentic RAG pipeline that ingests IT/tech video URLs, processes transcripts through semantic chunking, and produces structured, context-aware summaries to surface emerging technologies and in-demand skills.
  - Designed an automated data analysis pipeline with interactive graphs and charts that surface company-wise hiring patterns and role-specific demand, equipping 250+ *Technical Recruiters* with competitive insights to make informed, data-driven talent acquisition decisions.
    Tech Stack Used: Python, LangChain, Langfuse, CrewAI, Azure OpenAI (GPT-4o, text-embedding-3-snall), ChromaDB, JobSpy, React, FastAPI
- **Automated Presentation Insights Generator: CaseAligner** ▶ **Project Demo**
  - Designed and deployed an LLM application that repurposes existing client-facing PowerPoint presentations for case studies, with chain-of-thought prompting to transform them into new practice areas and industries, enabling rapid generation of domain-specific demo presentations.
  - Implemented an interactive chat interface linked to separated slides, allowing users to query and modify specific slide content, with session-wise conversation history stored for reference.
  - Created a summarization feature for all existing case studies, highlighting technology stacks, work types, key benefits, and outcomes to assist users in quickly identifying relevant content.
  - Developed comprehensive search functionality to locate information across all generated case studies, including references to specific slide numbers for precise navigation.
  - Added export functionality to download slides in the company's official presentation template.
  - Built a user interface for users to download and edit the knowledge base of case studies used for generating new ones.
  - Significantly accelerated demo preparation by saving 1–2 full days of slide crafting, allowing *Salespersons* to focus more on client engagement and closing deals.
    Tech Stack Used: Python, LlamaIndex, Azure OpenAI (GPT-3.5 Turbo), React, FastAPI, Azure App Service, Docker

Ongoing Research Projects

- BanglaMedQA: A Dataset for Adapting Zero-Shot Chain-of-Thought Reasoning in Bengali Medical Question Answering
- Design2React: A Multimodal LLM-based Framework for Image-to-React Code Conversion
- Cross-Cultural Moral Bias Detection in Story Understanding: Analyzing Intentionality and Fairness in LLM Judgments
- Breaking Silence: A Jailbreaking Prompt Framework for Generating Sensitive and Controversial Narratives in Bangla

Technical skills

Programming Languages	Python (NumPy, SciPy, Matplotlib, Pandas, Seaborn), Java, C++
Web Development	JavaScript, TypeScript, Tailwind CSS, FastAPI, Flask, React, Streamlit
Database	MySQL, PostgreSQL, MongoDB
Deep Learning Frameworks	TensorFlow, Keras, PyTorch
LLM Application Frameworks	LangChain, LangGraph, LlamaIndex, LlamaAgents
LLM Evaluation Frameworks	LangSmith, Langfuse, Ragas, DeepEval
Vector Database	AlloyDB for PostgreSQL (pgvector extension), ChromaDB, FAISS
Cloud Services (Azure)	Azure OpenAI, Azure SQL Database, Azure Container Registry, Azure App Service, Azure Blob Storage, Azure Boards, Azure Functions, Azure Bot Services
Cloud Services (AWS)	Elastic Container Registry (ECR), App Runner, Elastic Compute Cloud (EC2), S3 Buckets
Others	Prompt Engineering, Context Engineering, Docker, CrewAI, GitHub, Github Copilot, OpenCV, Microsoft Bot Framework, WebSocket, Apache Airflow, Jira Boards

Awards & Achievements

1. 11th IEEE i-COSTE 2025 Scholarship Award — *12th November 2025*
Research Scholarship Recognition — *Washington, United States of America*
Awarded a 50% registration fee scholarship for research excellence and paper presentation of "*PotatoGANs*" at the 11th IEEE International Conference on Sustainable Technology and Engineering (i-COSTE 2025).

2. Achievement Award — *14th August 2025*
DEXIAN (BANGLADESH) LIMITED – H1 2025 REFLECTION — *Dhaka, Bangladesh*
Recognized for **Excellence in Strategic Leadership, Agile Project Delivery, and Results-Driven Execution** **Highlights**

3. DL Sprint 2.0 - BUET CSE Fest 2023 — *5th August 2023*
Bengali Document Layout Analysis Competition — *Dhaka, Bangladesh*
Led **"Team AustPhoenix"** and secured 10th position out of 94 participants. **Leaderboard**

4. Poster Presentation — *14th June 2023*
RESEARCH SYMPOSIUM 2023: AN INTRA-AUST RESEARCH EXHIBITION — *Dhaka, Bangladesh*
"Classification of Potato Disease with Digital Image Processing Technique: A Hybrid Deep Learning Framework," secured a **Top 5** position out of 50 multidisciplinary posters in **"RESEARCH SYMPOSIUM 2023"** organized by AUST Research and Publication Club. **Poster** **Certificate**

5. Codeware 19 – Intra AUST Programming Contest (Spring 2019) — *9th October 2019*
AUST's Annual Programming Competition — *Dhaka, Bangladesh*
Commended for **technical competence and problem-solving ability** as a participant in AUST's annual programming competition. **Certificate**

Conference Presentation Certificate

1. ICCCNet-2024 — *17th-18th October 2024*
Springer LNNS, Acceptance Rate: 26% — *Manchester, United Kingdom*
Presented paper (Virtual) : "*Unraveling the Dominance of Large Language Models Over Transformer Models for Bangla Natural Language Inference: A Comprehensive Study*" **Certificate**

2. ICCCNet-2024 — *17th-18th October 2024*
Springer LNNS, Acceptance Rate: 26% — *Manchester, United Kingdom*
Presented paper (Virtual): "*Exploring Explainable AI Techniques for Improved Interpretability in Lung and Colon Cancer Classification*" **Certificate**

Reviewer Experience

- Scientific Reports **Certificate**
- Language Resources and Evaluation **Certificate**
- Discover Mental Health **Certificate**
- Cluster Computing **Certificate**

Tutoring Experience

Home Tutor — *2020–2023*
Mathematics & Physics — *Dhaka, Bangladesh*
Provided personalized one-on-one tutoring, developed custom lesson plans and exercises, monitored and tracked academic progress, and conducted regular practice tests and feedback sessions for high school students.

Voluntary Experience

1. AUST CSE ODYSSEY Spring 2022 — *23rd February 2023*
Organized by AUST CSE Society (CSES) — *Dhaka, Bangladesh*
Served as an **Organizer**, overseeing event logistics, stage management, and end-to-end program execution for a full-day university celebration featuring cultural performances and a live concert.

2. AUST CSE Carnival Spring 2022 — *19th January 2023*
Organized by AUST CSE Society (CSES) — *Dhaka, Bangladesh*
Served as an **Organizer** for the Intra-AUST Programming Contest, Robo Soccer, and Software Exhibition events, contributing to planning, coordination, and participant engagement. **Event Details**