Sazzad Hussain Farhaan

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Summary

Applied AI researcher with experience in **machine learning, multimodal AI, and intelligent software systems**, focused on building solutions that work in real-world settings. Has designed and deployed **LLM-based, vision–language–data driven models** for education, healthcare, and enterprise decision support. Combines research experience with strong software engineering skills, emphasizing **practical usability, scalability, and reliability**.

Research Interests

Core Areas: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Multimodal AI, Data Mining, Explainable AI

Applied Domains: Educational Technology, Intelligent Decision Support Systems, Healthcare AI, Social Computing, Business Intelligence, Human-Centered AI

Education

B.Sc. in Computer Science and Engineering | *University of Liberal Arts Bangladesh (ULAB)* 2016 – 2021
CGPA: 3.33 / 4.00

Undergraduate Thesis: *Natural Language Processing-based Quality Learning Management System for Student Evaluation and Engagement Metrics.*

Under the Supervision of: Prof. Nafees Mansoor, PhD

Honours & Scholarships:

- Vice Chancellor's Honors List Scholarship (Summer 2016)
- Merit-based Scholarship (USD 3,500)

English Proficiency Test: IELTS Band Score 7; Listening: 8, Reading: 6.5, Writing: 6.5, Speaking: 7

Academic & Technical Skills

Programming Languages: Python, JavaScript, SQL
ML/DL Frameworks: PyTorch, TensorFlow, Keras, Scikit-learn
NLP & CV Tools: Hugging Face, spaCy, OpenCV, Tesseract OCR
Systems & Platforms: Docker, AWS, FastAPI, Power BI, Git, LaTeX

Research Publications

Conference Proceedings (Published)

1. **Farhaan, S.H.**, Hasan, M.M., Ghani, F.M., Mansoor, N. (2024). *Enhancing Student Engagement and Performance Evaluation: An Integrated Approach for Quality Learning Management System.* Lecture Notes in Networks and Systems, Vol. 833, Springer.
2. Prodhan, M.S., Diip, N.S., Akter, S., **Farhaan, S.H.**, Mansoor, N. (2024). *Advancing Fish Species Identification in Bangladesh: Deep Learning Approaches for Accurate Freshwater Fish Recognition.* Lecture Notes in Networks and Systems, Vol. 834, Springer.
3. **Farhaan, S.H.**, Himel, T.H., Kaiser, A., Ali, M.N. (2025). *Harnessing Social Media to Advance Social Entrepreneurship in Bangladesh: A Qualitative Study.* ISBM 2025 Proceedings, Springer.

Book Chapters (Accepted / In Press)

4. **Farhaan, S.H.**, Alam, N.T., Das, M., Shoshy, S.A. (2025). *A Theoretical Framework for Multi-Modal AI in Longitudinal Prediction of Radiotherapy Outcomes.* Taylor & Francis. (Accepted)
5. Rabby, F., Rahman, M.M., Das, R., Hossain, M.H., Samir, R.A., **Farhaan, S.H.** (2025). *Early-Stage Coronary Artery Disease Prediction Using Coronary Angiogram for Stenosis Detection in Low-Resource Settings.* Taylor & Francis. (Accepted)

Manuscripts Under Review

6. Alam, N.T., **Farhaan, S.H.** (2026). *Few-Shot Adaptive Segmentation and Curriculum Learning for Equitable Oral Cancer Screening.* QPAIN 2026.
7. **Farhaan, S.H.** (2025). *Guided Inference Networks: A Formal Framework for Intellectual Stimulation and Human Reasoning in AI.* QPAIN 2026.
8. Islam, S., **Farhaan, S.H.**, (2026). *Categorical Bias Detection in Multilingual Models via Linguistic Typology: A Predictive ML and Transformer Approach.* ECCT 2026.
9. **Farhaan, S.H.**, Hasan, M. M. (2026). *Pixel and Filtration Hallucination in Large Vision–Language Models: Optical Physics Meets Multimodal Representation Learning.* ECCT 2026.
10. Shoshy, S.A., **Farhaan, S.H.**, Shovon. A. (2026). *Evaluating the Effectiveness of Low-Dose Antihypertensive Therapy in Preventing Recurrent Pre-Eclampsia.* WIDS 2026.

Research & Professional Experience

Research Assistant (Part-time) | *VECTOR Research Lab* **Jan 2026 – Present**

- Conducting experiments including dataset pre-processing, model implementation, and results analysis
- Support research through literature reviews, code development, and documentation for publications

Machine Learning Instructor (Part-time) | *Stamford University Bangladesh* **Oct 2025 – Present**

- Design and deliver undergraduate-level ML curriculum
- Supervise research-oriented student projects

Business Intelligence Analyst | *CS Meta Limited, Dhaka* **Aug 2024 – Present**

- Built ETL pipelines using Python, SQLAlchemy, Airflow
- Developed forecasting models and enterprise dashboards

Machine Learning Instructor | *Creative IT Institute* **Nov 2021 – Feb 2024**

- Trained 100+ learners in AI/ML and MLOps fundamentals

Fellowships & Research Internships

Machine Learning Engineer | *Omdena, Canada (Remote)* **Sep 2023 – Mar 2024**

- Applied CNNs, Transformers, and ResNet architectures
- Recognized as top contributor

Data Scientist Fellow | *Fellowship.AI, USA (Remote)* **Oct 2023 – Dec 2023**

- Developed Large Action Model pipelines using Hugging Face and LangChain

Leadership & Academic Service

- **Founding Chairperson**, IEEE Computer Society ULAB Student Branch: Established the chapter from inception, developed the annual strategic plan, and led more than 25 academic, research, and professional development events.
- **Chairperson**, IEEE ULAB Student Branch: Coordinated inter-university collaboration among 23 IEEE-affiliated universities in Bangladesh; increased membership growth by over 250%.
- **Lead Publication**, IEEE Computer Society Bangladesh Chapter (Team SPARK): Oversaw technical content dissemination, conference publications, and research communication initiatives.
- **Secretary**, IEEE CS ULAB Student Branch: Facilitated coordination between regional IEEE sections and student branches, strengthening industry–academia engagement.

Honours & Awards

Leadership & International Recognition

- **Gold Standard Awardee**, *The Duke of Edinburgh's International Award* (2025): Awarded by the British High Commissioner for achieving the highest level of excellence across skill development, physical recreation, social welfare, and adventurous journey components.
- **Silver Standard Awardee**, Duke of Edinburgh's International Award (2024).
- **Bronze Standard Awardee**, Duke of Edinburgh's International Award (2022).

Innovation & Technical Competitions

- **Top 40 Finalist**, NASA Space Apps Challenge (Regional Round, 2018): Project on sustainable multi-source energy harvesting integrating solar tracking and kinetic energy conversion.
- **Champion**, ULAB Techfest Idea Contest (2019): Developed an AI-integrated wellness tracker for personalized nutrition and fitness optimization.
- **1st Runner-Up**, ULAB Techfest Poster Competition (2019): Research on acoustic energy harvesting in urban environments.

Academic & Community Service Recognition

- **Peer Mentor Award** (2019): Recognized by ULAB Student Affairs Office for mentoring first-year students and supporting academic transition.
- **Lead Volunteer**, International Joint Conference on Computational Intelligence (IJCCI 2019): Led a team of over 50 volunteers for successful international conference execution.

References

Prof. Nafees Mansoor, PhD
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Prof. Muhammad Golam Kibria, PhD, SMIEEE
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