Sazzad Hussain Farhaan

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Career Objective — As an AI Developer with significant experience in Machine Learning, I am seeking opportunities to contribute to cutting-edge research and practical applications in Ethical AI for social good. I am open to working in diverse domains aligned with the research objectives.

Recent Experience

AI Developer — **May 2024 – Present**
Web and More Limited, England, United Kingdom — *Full-time - Remote*
Domain: Image Processing, OCR (Optical Character Recognition) Tasks, Image Denoising, Compression Algorithms.

Machine Learning Engineer — **09/2023 – 03/2024**
Omdena, Toronto, Canada — *Part-time - Remote*
Domain: Natural Language Processing (NLP), Web Scraping, Computer Vision, Medical Image Analysis.

Machine Learning Engineer — **11/2021 – 02/2024**
Creative IT Institute, Dhaka, Bangladesh — *Full-time - Onsite*
Domain: Computer Vision, NLP, Relational Agents, Generative AI, Python Programming, Agile.

Data Scientist — **10/2023 – 12/2023**
Fellowship.AI, California, United States — *Fellowship - Remote*
Domain: Large Action Models, AI, NLP, Transformer Architectures, ETL Pipelines.

Data Scientist & Digital Solutions Strategist — **12/2017 – Present**
Choluuk Technologies — *Freelance - Consultant*
Domain: Data Analysis, Audience Segmentation, Data-Driven Decision Making, Predictive Modeling.

Undergraduate Teaching Assistant — **11/2017 – 04/2019**
University of Liberal Arts Bangladesh — *Part-time - Onsite*
Domain: Computer Science, Calculus, Programming Languages, Student Advising, Mentoring.

Education

Master of Science in Computer Science and Engineering — **10/2022 - Current**
United International University (UIU) — *CGPA: 3.50 on a scale of 4.00*
Major Track: Intelligent Computing

Bachelor of Science in Computer Science and Engineering — **2016 - 2020**
University of Liberal Arts Bangladesh (ULAB) — *CGPA: 3.33 on a scale of 4.00*
(Thesis + Project): Natural Language Processing based Quality LMS for Students Evaluation and Engagement Metrics Calculation

Projects

EquiJob - AI-Driven Bias Detection in Job Descriptions — Link to Case Study

Technologies: Word2Vec, GloVe, BERT, GPT, EDA, Selenium, Beautiful Soup

Developed a tool to detect and analyze gender bias in job descriptions using NLP techniques. Conducted feature engineering, model training, and validation.

Early Detection and Diagnosis of Alzheimer's Disease — Open in Hugging Face

Technologies: Nibabel, OpenCV, Scikit-Image, Keras, TensorFlow, PyTorch, CNN Transfer Learning, DeepChecks, Docker, FastAPI

Collaboratively developed a CNN for early detection of Alzheimer's disease using a dataset of 6,400 MRI images. Model achieved 99.22% accuracy. Deployed as a REST API using Docker and Streamlit, hosted on Hugging Face Spaces.

Travel Agent Large Action Model (LAM) — Open in GitHub [Private Repository]

Technologies: Amadeus API, OpenAI API, 8-bit Quantization, Few Shot Learning, Mistral LLM, Ollama LLM, LangChain, spaCy

Collaborated on a travel assistant application using Amadeus API and OpenAI API. Implemented a chatbot interface with Streamlit, and contributed to a Large-Action Model (LAM) pipeline. Enhanced skills in AI and NLP, and optimization techniques.

Research Experience

Publication

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. In: Proceedings of World Conference on Information Systems for Business Management. ISBM 2023. Lecture Notes in Networks and Systems, vol 833. Springer, Singapore.

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. In: Proceedings of World Conference on Information Systems for Business Management. ISBM 2023. Lecture Notes in Networks and Systems, vol 834. Springer, Singapore.

Under Review

1. Early-Stage Coronary Artery Disease (CAD) Prediction Using Coronary Angiogram for Stenosis Detection.
2. Bangla Conversational Chatbot to Diagnose and Aid ADHD Among Bangladeshi Adults.

Technical Competencies

Programming Languages: Python, C++, Java, JavaScript, TypeScript

Libraries and Frameworks: TensorFlow, Keras, PyTorch, DLTK, OpenCV, Scikit-learn, Scikit-image, NumPy, SciPy, Tesseract OCR, Seaborn, Streamlit, LangChain, SpaCy, FastAI, React Native CLI, Hugging Face Transformers, librosa, torchaudio, Fairseq, OpenAI CLIP

Computer Vision: Edge detection, Histogram equalization, Morphological operations, Filtering techniques, Image denoising, Object detection, Image segmentation, Optical character recognition (OCR)

Machine Learning & Deep Learning: Supervised learning, Unsupervised learning, CNNs, RNNs, LSTM, Transformer Architectures, Model training, Model evaluation, Parameter tuning, Multimodal learning, Attention mechanisms, Transfer learning

Tools & Platforms: Git, GitHub, DVC, DagsHub, Jupyter Notebooks, Docker, AWS Sagemaker, Roboflow, Data Annotation, LATEX

Web Scraping: Selenium, Beautiful Soup

Soft Skills

Public Speaking, Team Work, Steadiness, Emotional Intelligence, Human Management, Mentoring

Achievements

The Silver Standard Awardee, The Duke of Edinburgh's International Award: Achieved Silver Standard in skill, physical recreation, social welfare, and adventurous activities.

The Bronze Standard Awardee, The Duke of Edinburgh's International Award: Achieved Bronze Standard in skill, physical recreation, social welfare, and adventurous activities.

Vice Chancellor's Honors List Scholarship, Summer 2016: Honors List Scholarship awarded for outstanding academic performance in Computer Science and Engineering Department.

Half Scholarship (3000 USD) from ULAB: Completed the undergraduate degree.

NASA Space Apps Challenge 2018, Top 40, Regional Round: Project - Sustainable Multi-Source Energy Harvesting System: Solar Tracking and Raindrop Kinetic Conversion in a Hybrid Photovoltaic Array.

ULAB Techfest 2019, Champion, Idea Contest: Project - AI Integrated Wellness Tracker: A Comprehensive Mobile Application for Personalized Nutrient Monitoring, Caloric Balance, and Exercise Optimization.

ULAB Techfest 2019, 1st Runner-Up, Poster Display: Project - Acoustic Energy Harvesting in Urban Environments: Converting Noise Pollution into Sustainable Electric Power.

IJCCI 2019, Lead Volunteer: Led a team of more than 50 volunteers to successfully organize the International Joint Conference on Computational Intelligence 2019.

Co-Curricular Experience

Chairperson, IEEE CS ULAB Student Branch Chapter
04/2019 – 08/2020
Founding Chairperson of the Student Branch Chapter. Led the executive team for 25 collaborative and internal events.

Chairperson, IEEE ULAB Student Branch
03/2018 – 04/2019
Prepared the Branch Annual Plan. Organized and coordinated more than 20 flagship and international events for the student branch. Increased membership drive to 250%.

Secretary, IEEE ULAB Student Branch Chapter
07/2017 – 04/2018
Delegated activities from Regional Section to Student Branch. Increased membership from 10 to 70+ members.

Lead Publication, Team Spark, IEEE CS Bangladesh Chapter
07/2019 – 08/2020
Facilitated collaboration among 23 IEEE-affiliated universities in Bangladesh, fostering research groups for professional and student members to bridge the industry-academia gap.

Referees

Prof. Mohammad Shorif Uddin
Vice Chancellor, Green University of Bangladesh
Professor, Department of Computer Science and Engineering
Jahangirnagar University
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Nafees Mansoor, PhD
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