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.

Research Interests — I am passionate about leveraging AI for social good, with a focus on mental health, neurodegenerative diseases, and healthcare. My key interests include multimodal learning, natural language processing, computer vision, healthcare AI, and ethical AI. I aspire to build my career as a researcher in Multimodal Machine Learning.

Recent Experience

Business Analyst **08/2024 – Present**
CS, London, United Kingdom *Full-time - Hybrid*
Domain: Project Management, Strategic Planning, Financial Analysis, SWOT Analysis, Stakeholder Management

AI Developer **May 2024 – Present**
Web and More Limited, Blackpool, United Kingdom *Part-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

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 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.

Technical Competencies

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

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

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)

Web Scraping: Selenium, Beautiful Soup

Soft Skills

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

Achievements

Vice Chancellor's Honors List Scholarship, Summer 2016

Awarded Merit based Scholarship worth 3,500 USD from University of Liberal Arts Bangladesh

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.

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

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

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

Lead Volunteer, IJCCI 2019: 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.