Sazzad Hussain Farhaan

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Career Objective — An AI Developer seeking for PhD opportunities in the fields of Multimodal Learning, with a significant experience in Machine Learning and a passion for contributing to cutting-edge research and practical applications, I am open to working in diverse domains aligned with the demands of the research objectives.

Research Interests — I am passionate about leveraging Machine Learning to solve real-world challenges, particularly in multimodal learning, healthcare, and ethical AI. My key interests include integrating text, image, and video data for enhanced models **(Multimodal Learning)**, advanced text analysis and language generation **(NLP)**, image processing and medical image analysis **(Computer Vision)**, creating realistic data with GANs and VAEs **(Generative AI)**, early disease detection and diagnosis **(Healthcare AI)**, and ensuring fairness and mitigating bias in AI systems **(Ethical AI)**.

Recent Experience

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

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

Creative IT Institute, Dhaka, Bangladesh **12/2021 – 02/2024**
Machine Learning Engineer *Full-time - Onsite*
Domain: Computer Vision, NLP, Relational Agents, Generative AI, Python Programming, Agile.

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

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

Students Affair Office, ULAB **11/2017 – 04/2019**
Undergraduate Teaching Assistant *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 [Earned 141 credits]
(Thesis + Project): Natural Language Processing based Quality LMS for Students Evaluation and Engagement Metrics Calculation

Research Experience

Publication

1. Enhancing Student Engagement and Performance Evaluation: An Integrated Approach for Quality Learning Management.
2. Advancing Fish Species Identification in Bangladesh: Deep Learning Approaches for Accurate Freshwater Fish Recognition.

Under Review

1. Early-Stage Coronary Artery Disease (CAD) Prediction Using Coronary Angiogram for Stenosis Detection.
2. Machine Learning-Based Early Detection of Diabetes in the Context of Endocrine Disorders.
3. Bangla Conversational Chatbot to Diagnose and Aid ADHD Among Bangladeshi Adults.
4. EquiJob: Using AI to Balance Bias in Job Descriptions.

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.

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.

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.

Technical Competencies

Programming Languages: Python, C++, MATLAB, Java

Libraries and Frameworks: TensorFlow, Keras, PyTorch, DLTK, OpenCV, Scikit-learn, Scikit-image, NumPy, SciPy, Tesseract OCR, Seaborn, Streamlit, LangChain, SpaCy, FastAI, React Native

Computer Vision: Edge detection, Histogram equalization, Morphological operations, Filtering techniques, Image denoising

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

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.

Referees

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