NASIM MAHMUD NAYAN

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Objective

Pursuing an advanced degree with dedication to Machine Learning (ML) and cyber-physical systems, driven by research passion and interdisciplinary collaboration. I aim to excel, innovate, and contribute meaningfully to my field with dedication, discipline, honesty, and teamwork.

Education

- **University Of Information Technology And Sciences**
  B.Sc. in Computer Science Engineering
  Overall GPA: 3.62(out of 4.0)

Honors And Awards

- **Fastest problem solver:** UITS Victory Day Programming Contest — UITS , 2021
- **2nd/45:** Inter-university Programming Contest — UITS , 2022
- **1st/25:** Inter-university PowerPoint Presentation Competition — UITS , 2020
- **Employee of the month(August):** Primacy infotec LTD — Primacy infotec ltd, 2023

Research Interests

Machine learning, Cyber-Physical System, Medical Cyber-Physical System, Internet of things, Healthcare, Artificial intelligence, Deep Learning.

Research Experience

UITS , Department of Computer Science and Engineering
Independent Research under Mohammad Mobarak Hossain
Dhaka, Bangladesh
Jan. 2022 - present

- Develop a machine learning-based system to predict maternal health risks.
- Implemented ML algorithms were used to identify patterns and risk factors associated with maternal health complications.
- Integrated Homomorphic encryption techniques to ensure secure handling and protection of patient data.

UITS , Department of Computer Science and Engineering
Independent Research under Md. Monirul Islam
Dhaka, Bangladesh
July. 2022 - present

- Developed an integrated and original method to forecast illness.
- Collaborated with team members within his research lab, 'Research Rising Lab.
- Conducting literature reviews to gather relevant research articles.

UITS , Department of Computer Science and Engineering
Independent Research under Mohammud Usama Islam
Dhaka, Bangladesh
May. 2022 - July. 2023

- Work on diabetes disease prediction research project using machine learning techniques.
- Conducted data preprocessing, including data balancing and feature engineering, to enhance predictive model accuracy.
- Implemented various machine learning algorithms and fine-tuned hyperparameters to optimize model performance, presenting findings in conferences and publications.

AIUB, Department of computer science and Engineering

Independent Research under Dr. Ashraful Islam

Dhaka, Bangladesh
June. 2023 - Sep. 2023

- Conducted advanced search and evaluation of articles to investigate the application of computer vision (CV) in the medical field.
- Identified Convolutional Neural Networks (CNN) as the dominant approach in medical CV research.
- Identified Computer vision is primarily utilized in surgical assistance within the medical sector domain.

Professional Experience

AI Trainer | Enhancing Digital Government Economy (EDGE) Project | May 2023 - Present.

- Conducted training sessions on AI topics, including machine learning and computer vision.
- Developed educational materials and mentored students to enhance their AI skills.
- Collaborated with diverse students to create a supportive learning environment.

AI Engineer | Primacy Infotech Ltd | July 2023 - Present.

- Led a team in developing AI-driven tour planning tools for six historic locations in Bangladesh, streamlining itinerary creation based on user preferences.
- Launched and managed trial phases for AI tour planning tools, collecting valuable user feedback for ongoing improvements.
- Currently overseeing the development and testing of "Virtual Trail," a Computer Vision-based AR tool, for online and in-shopping mall virtual t-shirt try-ons.
- Effectively managing both projects, ensuring successful coordination, development, and user testing for continuous enhancement.

Selected Undergraduate Project

Multiple disease prediction systems using machine learning 2022

- An ML-based web application developed using the Streamlit framework allows users to monitor their real-time health condition by simply inputting values." **Live, GitHub.**

E-commerce Website for Outfit only 2021

- A website offering high-quality Outfit for purchase, designed and built using HTML, CSS, JavaScript, and PHP." **Live, GitHub.**

Breast Cancer Detection Using Flask Api 2023

- An ML web application developed using the Flask API framework allows users to monitor real-time cancer detection. **Live, GitHub.**

Conference Paper Presentation

Nasim Mahmud Nayan , Ashraful Islam, Muhammad Usama Islam, Eshtiak Ahmed, Mohammad Mobarak Hossain , Md Zahangir Alam. Paper: "SMOTE Oversampling and Near Miss Undersampling Based Diabetes Diagnosis from Imbalanced Dataset with XAI Visualization" presented in 28th IEEE Symposium on Computers and Communications (ISCC) 2023 on a special session,9-12 July, Tunisia, North Africa 2023.

Salah uddin parbehz Shakil, Mohammad abul kashem, md. monirul Islam , **Nasim Mahmud Nayan** , jia uddin. Paper: "Investigation of Air Effluence Using IoT and Machine Learning" presented in 6th International Conference on Emerging Technologies in Computing 2023 (iCETiC '23), 17-18 August, University of Essex, Southend Campus, UK 2023.

Skills

500+ problem solve
Codeforces: NM Nayan.
Beecrowd: NMNAYAN.
Programming Language: Python, C, C++, HTML, CSS.
Machine Learning: Sklearn, Tensorflow, Pandas, Matpotib, Numpy, Openai, etc.
Research Skills: Methodology, Data Analysis, Experimental Design, Literature Review, Data Manipulation.
Framework: Streamlit, Flaskapi.
Version Control: Git, Github
Others: Data structures · Algorithms

Campus Activities

Junior executive | programmer hub wings at UITS computer club — Jan. 2022 - Aug. 2022

Senior executive | research hub wings at UITS computer club — Oct. 2022 - Jan.2023

Publications

- M. Sahidullah, N. Nayan, M. Morshed, M. Hossain, and M. U. Islam. Date fruit classification with machine learning and explainable artificial intelligence. 184, 03 2023
- The paper titled 'A Medical Cyber-Physical System for Predicting Maternal Health in Developing Countries Using Machine Learning' is currently awaiting a decision from the editor at Healthcare Analytics (Elsevier)."
- The paper titled 'A Review of Modern Methods for Safely Transmitting Pregnancy Health Information' has been accepted for G-CIDA 2023."
- The paper titled 'The Role of Computer Vision in Healthcare: A Review."' is under review at the 2023 5th International Conference on Sustainable Technologies for Industry 5.0 (STI, 2023)."
- The paper titled 'An IoT Based Real-Time Environmental Monitoring System for Developing Areas' is under review at Journal of Advanced Research in Applied Sciences and Engineering Technology"
- The paper titled 'Parkinson's Disease Prediction Utilizing Explainable AI Techniques' is currently under review by 'The Journal of Supercomputing(Springer).'
- The paper titled 'Enhancing the Security of Pregnancy Health Data Transmission through Homomorphic Encryption: An Advanced Mode' has been accepted for inclusion in the book chapter 'Internet of Things: Applications and Technology,' which is part of CRC Press, Taylor and Francis Group, and indexed in Scopus."

References

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