

## Iftekhhar Mahmud

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### Education

**United International University**

Dhaka, Bangladesh

Bachelor of Science in Computer Science and Engineering

2024

#### Awards and Honors:

- Received 50% and 25% scholarships in multiple trimesters for being in the top 10% of the department.
- Best Technical Presentation Award at IEEE 27th ICCIT 2024.
- Champion, Group Presentation Competition organized by IQAC, UIU, 2018.

### Academic Projects

#### Crop Price Prediction Web Application:

*Streamlit, Scikit-learn, Pandas, PyDeck, Geopy, Matplotlib*

Developed an interactive web app using Streamlit to forecast retail and wholesale crop prices based on region, market, and date input. Applied Decision Tree Regression models on cleaned and preprocessed historical crop price data across various Bangladeshi regions. Integrated geolocation mapping using PyDeck and Geopy to visualize market locations interactively. Designed a user-friendly interface for selecting commodity types, market locations, and visualizing predicted prices with real-time model inference. Utilized One-Hot Encoding, IQR-based outlier removal, and Pipeline architecture for efficient preprocessing and model training.

**Project Link:** [GitHub Repository](#)

#### 2D Platformer Game & 3D Animation Scene

*C++, OpenGL*

Developed a 2D side-scrolling platformer featuring custom levels, character animation, enemy AI, and scoring. Also created a 3D OpenGL-animated scene with transformations, lighting, and camera motion to simulate realistic animation. Both projects focused on performance optimization and core graphics principles.

**Links:** [2D Game](#) | [3D Animation](#)

#### E-Clinic – Clinic Management System:

*Laravel, PHP, MySQL, Bootstrap, JavaScript, HTML, CSS*

Developed a comprehensive web-based clinic management system to streamline administrative and clinical operations. Implemented features such as patient registration, appointment scheduling, medical record management, and billing. Utilized Laravel framework for backend development and Bootstrap for responsive frontend design. Collaborated in a team of five to ensure modular code structure and efficient database design.

**Project Link:** [GitHub Repository](#)

#### E-Wholesale Management System:

*MySQL, HTML, CSS, JavaScript, PHP*

Developed a comprehensive web-based application to streamline wholesale business operations. The system manages inventory, sales, purchases, and customer information, enhancing efficiency and accuracy in wholesale management.

**Project Link:** [GitHub Repository](#)

### Technical Skills

**Language:** Python, C/C++, PHP, HTML, CSS, Java, SQL, Excel

**Frameworks/Libraries:** Matplotlib, Seaborn, Numpy, Pandas, Scikit-Learn, Tensorflow, Streamlit, Laravel, Django

**OS:** Linux, Windows

**Technical Writing:** Latex

**CMS & Tools:** Power BI, Visual Studio, DataGrip, PyCharm, Jupyter Notebook, Git, Github, PostgreSQL

## Research Experience

United International University

Dhaka, Bangladesh

Undergraduate Thesis

January 2024 - October 2024

- **Thesis Title:** Predicting Crop Prices using Machine Learning Algorithms for Sustainable Agriculture.
- Explored several regression and time series models and implemented for price forecasting. Worked on data preparation, handled imbalance data and worked on model training and produced result, worked on visualizing the results using multiple machine learning libraries in python.
- **Thesis Publication:** I. Mahmud, P. R. Das, M. H. Rahman, A. R. Hasan, K. I. Shahin, and D. M. Farid, "*Predicting Crop Prices using Machine Learning Algorithms for Sustainable Agriculture*," *2024 IEEE Region 10 Symposium (TENSYP)*, New Delhi, India, 2024, pp. 1–6.  
DOI: [10.1109/TENSYP61132.2024.10752263](https://doi.org/10.1109/TENSYP61132.2024.10752263)
- **Journal Submission (In Progress):** An extended version of the thesis is currently being prepared for submission to a reputed peer-reviewed journal.

United International University

Dhaka, Bangladesh

Undergraduate Student

January 2024 - December 2024

- Worked with multimodal dataset for emotion detection using deep learning approach. Conducted image processing and worked with multiple image models, fine tuned and retrained the models appropriately for the research need.
- **Publication:** I. Mahmud, P. Das, N. Rifa, I. Hossain, R. Rahman, and D. M. Farid, "*Multimodal Emotion Recognition Using Visual and Thermal Image Fusion: A Deep Learning Approach*," *27th International Conference on Computer and Information Technology (ICCIT)*, 2024.
- **Award:** Received *Best Technical Presentation Award* at IEEE 27th ICCIT 2024.  
DOI: [10.1109/ICCIT64611.2024.11022356](https://doi.org/10.1109/ICCIT64611.2024.11022356)

## EXTRACURRICULAR ACTIVITIES

UIU Computer Club

2022 - 2024

General Member

Participated on multiple events hosted by the club and worked as a volunteer.

## REFERENCES

- **Prof. Dr. Dewan Md. Farid**  
Dean of School of Science & Engineering, Professor of Computer Science & Engineering, Southeast University, Email: dean.sse@seu.edu.bd, dewanfarid@seu.edu.bd
- **Raiyan Rahman**  
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