ISMAIL MAHMUD NUR

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SUMMARY

Computer Science & Engineering student specializing in AI/ML and Software Engineering. Proficient in Python and Java with demonstrated experience building full-stack web, mobile, and desktop applications. Combines practical development skills with a strong research background, evidenced by multiple co-authored publications in international journals.

EDUCATION

Bachelor of Science in Computer Science & Engineering
East West University, Dhaka, Bangladesh **2021 - 2025**

- **Major:** Software Engineering.
- **Capstone Project:** "GuavaCare: A Machine Learning Approach for Identifying and Classifying Guava Leaf Diseases".
- **GPA:** 3.37

Higher Secondary Certificate (HSC) – Science
Motijheel Govt. Boy's High School, Dhaka, Bangladesh **2018 - 2020**

- **GPA:** 5.00

Secondary School Certificate (SSC) – Science
Ali Ahmed High School and College, Dhaka, Bangladesh **2016 - 2018**

- **GPA:** 5.00

EXPERIENCE

Web, Mobile, & Desktop Development | Dhaka, Bangladesh **2022 – Present**

- Designed, developed, and deployed a diverse portfolio of full-stack applications, managing the entire software development lifecycle.
- Built robust, user-centric solutions using a versatile tech stack including Java for Android, JavaFX for desktop, and PHP/MySQL for web.
- Implemented key features such as Firebase real-time data synchronization, role-based user authentication, REST API integration, and ML model deployment.

Independent Researcher – AI & ML | Remote **2023 – Present**

- Co-authored and published multiple research papers on sustainable computing, precision agriculture, and environmental science in international journals.
- Managed the end-to-end research lifecycle, from literature review and dataset preparation to model implementation, evaluation, and manuscript drafting.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, JavaScript (ES6+), Kotlin, PHP, SQL, C
- **AI & Machine Learning:** PyTorch, TensorFlow, Scikit-learn, spaCy, Pandas, YOLOv8, CNNs, Object Detection, Grad-CAM
- **Web Development:** HTML5, CSS3, Bootstrap, PHP, REST APIs, Apache
- **Mobile Development:** Java, Firebase (Authentication, Realtime Database)
- **Desktop Development:** Tauri, Eel, Java Swing
- **Databases:** MySQL, Oracle, SQLite, Firebase, IndexedDB, MongoDB
- **Developer Tools:** Git, GitHub, Figma, Streamlit, Android Studio, Visual Studio Code

PROJECTS

GhumTaranga (Smart Sleep App) (UI/UX Design Project)

- Conducted user research (41 participants) to identify sleep habits and challenges.
- Designed low-fidelity sketches and a high-fidelity Figma prototype.
- Translated user preferences into a calming, data-driven UI.
- Performed a usability evaluation using Nielsen's 10 Heuristics to prioritize design improvements.
- Tools: Figma, User Research, Prototyping, Heuristic Evaluation.

GuavaCare – AI-Powered Guava Leaf Disease Detection (Desktop Application)

- Engineered a standalone desktop application using Python and Eel as an offline, AI-powered diagnostic tool for farmers.
- Developed and compared multiple CNN models (EfficientNet, ResNet-50, DenseNet-121), achieving a top accuracy of 98.50%.
- Integrated a YOLOv8 model for precise object detection of disease symptoms and incorporated Grad-CAM for AI explainability and user trust.
- Tech Stack: Python, PyTorch, YOLOv8, Eel, HTML, Bootstrap 5, PyInstaller

Khujo – Rental Property Management System (Web Programming Project)

- Developed a full-stack, web-based platform to streamline rental property management for landlords, tenants, and administrators.
- Engineered a role-based access control system with distinct dashboards and functionalities for each user type.
- Tech Stack: PHP, MySQL, JavaScript, HTML5, CSS3, Bootstrap

AI-Saba Homoeo Hall Assistant (Desktop Application)

- Developed a high-performance desktop app with Tauri to digitize patient records, replacing a manual paper-based system.
- Implemented full CRUD functionality for patient and prescription data with secure, offline-first local storage using IndexedDB.
- Tech Stack: Tauri, JavaScript (ES6+), IndexedDB, HTML5, Bootstrap 5

MedChatBot – Symptom-Based Medicine Recommender (AI Project)

- Developed a chatbot using Retrieval-Augmented Generation (RAG) to recommend medications based on user symptoms.
- Employed spaCy for NLP to process user input and implemented a symptom expansion feature using a synonym dictionary to improve retrieval accuracy.
- Tech Stack: Python, Streamlit, spaCy, Pandas

LANGUAGES

- **Bengali** (Native)
- **English** (Fluent)

PUBLICATIONS

1. Badal, N. B., Anjum, F., Nur, I. M., et al. "Assessing the Significance of Machine Learning in Forecasting Energy Recovery from Waste." Procedia Computer Science 252 (2025): 623-632. **Link**
2. Islam, M. S., Jubayer, T., Noor, S. B. H., Nur, I. M., et al. "Detection of Sugarcane Leaf Diseases Using Custom CNN and ResNet50." International Conference on Innovations in Data Analytics (2024): 277-287. **Link**
3. Islam, M. S., Noor, S. B. H., Jubayer, T., Nur, I. M., et al. "Earthquake Magnitude Prediction: A Survey on Machine Learning Models, Datasets, Techniques, Challenges, and Future Directions." International Conference on Innovations in Data Analytics (2024): 573-583. **Link**