

# Tanvir Ahmed

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## Skills

**Languages:** Python, C, C++, Java, JavaScript, Dart, PHP, SQL

**AI / ML & Libraries:** TensorFlow, PyTorch, scikit-learn, Keras, OpenCV, Mediapipe, NumPy, Pandas, Selenium, Tkinter, Matplotlib, Seaborn

**Web / Mobile / Tools:** Flutter, Firebase, HTML, CSS, JavaScript, PHP, Git, GitHub, VS Code, Figma, Google Colab, Kaggle

**Concepts & Domains:** Machine Learning, Deep Learning, Computer Vision, Image/Video Processing, NLP, Object Tracking, IoT, Automation, Human-Computer Interaction, Data Visualization, Big Data.

## Work Experience

### Student / Researcher (Freelance & Academic Projects)

2022–Present

*Independent Projects & Research*

- Built and implemented applied ML and automation projects during B.Sc.; collaborated with supervisors on data set curation, model design, and end-to-end apps.
- Engaged in dataset publication, model evaluation, and iterative deployment in the cloud/desktop for small-scale users.

## Education

### Daffodil International University

2022–2025

B.Sc. in Computer Science and Engineering

**Relevant Coursework:** Object-Oriented Programming, Databases, Discrete Mathematics, Data Structures and Algorithms, Operating Systems, Computer Networks, Machine Learning and Data Mining, Image Processing, Computer Graphics, System Design, Software Engineering, Information Security, Statistics and Probability.

### Cantonment College Jashore

2018–2020

Higher Secondary Certificate (HSC)

**GPA: 5.00**

### Nabojibon Institute Satkhira

2016–2018

Secondary School Certificate (SSC)

**GPA: 5.00**

## Project Work

### Edu-Buddy — AI Student Assistant

2023–2024

*Python, SpeechRecognition, Google TTS, SQLite, Tkinter*

- Voice-activated assistant for reminders, study schedules, and quick access to educational resources.
- Modular intent parsing and dialog flow; integrated TTS and speech recognition for desktop use.

### AgroKart BD — Cross-Platform Marketplace

2024

*Flutter, Dart, Firebase, HTML/CSS/JS, PHP, SQL*

- Developed a mobile app (Flutter) and a responsive web portal connecting farmers directly with consumers.
- Implemented user authentication, product listings, cart and backend order management (PHP & SQL).

### Hand Gesture Virtual Mouse

2023–2024

*Python, OpenCV, Mediapipe, PyAutoGUI*

- Real-time gesture-controlled cursor with click, scroll, and drag using multi-landmark detection.
- Optimized frame pipeline for low-latency interaction on consumer hardware.

### Cross-Platform Task Manager

2023–2024

*Python, psutil*

- Lightweight tool to monitor processes, CPU/memory usage, and perform safe terminations across platforms.
- Boost and optimize the device for more than 10-12% of performance.

### Automation Tool for Local Garment

2024–2025

*Python, Selenium, Tkinter*

- GUI app to upload Excel and auto-fill web forms with dynamic field mapping, reducing manual entry and errors.

### Bangladesh Crime Map & News Aggregator

2024–2025

*Node.js, Express, Axios/Cheerio, Leaflet.js, Chart.js*

- Real-time crime tracking platform aggregating data from 18+ national news sources using web scraping with intelligent fallback mechanisms.
- Developed a bilingual, responsive dashboard with geospatial mapping (Leaflet.js), dynamic filtering, and automated classification of 10+ crime categories across Bangladesh.

## Research & Publications

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### **Plant Leaf Disease Recognition Dataset (Published)**

*Mendeley Data: Plant Leaf Disease Recognition Dataset*

2023–2024

- Curated and published 20000+ annotated plant leaf images (zucchini, hibiscus, gourd, papaya) to support CV research.

### **Deep Learning Models for Multi-Class Plant Leaf Disease Classification**

*CNN, Image Classification*

2023–2024

- Trained Multiple CNNs achieving validation accuracy exceeding 97% using augmentation and tuning.

### **Truth in Pixel: Deepfake Detection (Ongoing)**

*Computer Vision, Deep Learning*

2024–Present

- Working on pixel-level inconsistency detection and robust artifact-based pipelines for manipulation detection.

### **Exploiting Transformer Architectures for Domain-Specific Text Categorization: The m-BERT Perspective**

*Transformer Learning, Deep Learning, Natural Language Processing*

2024–2025

- Achieved benchmarking accuracy on this research among all existing works.

## Awards and Certificates

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### **Selected Achievements**

- First Position — District Level Science Fair (Innovation Category)
- 9th Position — Rotract science fair at Jashore University of Science and Technology (college-level).
- Published dataset (Mendeley) and multiple ML project contributions