



PERSONAL DETAILS

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[LinkedIn Profile](#)

[GitHub Profile](#)

[Personal Portfolio](#)

EDUCATION

July 2020 - Dec 2024
NORTH SOUTH UNIVERSITY

- B. Sc. in Computer Science
- CGPA: 3.31 (87.1%)

July 2017 - Oct 2019
WILLES LITTLE FLOWER SCHOOL & COLLEGE

- Pearson Edexcel IAL (A-Levels)
- Result: 1A and 2B

Jan 2016 - June 2017
WILLES LITTLE FLOWER SCHOOL & COLLEGE

- Pearson Edexcel IGCSE (O-Levels)
- Result: 2A*, 4A and 2B

SKILLS

- **Programming Languages**
 - C
 - C#
 - JAVA
 - Python
- **Machine Learning and AI**
 - ML/DL Algorithms
 - PyTorch, TensorFlow
 - Keras, OpenCV
 - Feature Engineering
 - Computer Vision, NLP
 - Transformers (Hugging Face)

RISTIAN UDDIN

Passionate about crafting intelligent solutions, I specialize in machine learning, AI-driven algorithms, and full-stack software development for web and mobile platforms. With expertise in data science, model optimization, and innovative research, I excel at transforming complex data into actionable insights across diverse domains.

WORK EXPERIENCE

- **Caretutors** MAR 2023 - FEB 2025
Verified Tutor
 - I provide personalized teaching tailored to each student's academic needs and intellectual abilities, ensuring effective learning experiences.
- **Versatile Coaching Centre** July 2017 - June 2018
Teaching Assistant
 - As a teaching assistant, I was responsible for checking exam papers and invigilating exam rooms to ensure a fair and orderly testing environment and also managed the class schedule for my teacher.

RESEARCH ACTIVITIES

- **A Diagnostic Pipeline for Multi-Class Classification of Chest X-Ray Images Using Knowledge Distillation and Semi-Supervised Segmentation (In Review for Conference Publication)**
 - Improved AI-based disease detection by integrating knowledge distillation with semi-supervised segmentation, achieving unmatched accuracy in diagnosing COVID-19, pneumonia, and tuberculosis.
 - Enhanced CLIP-KDViT by distilling ViT into a lightweight MobileNetV2, boosting accuracy to 99%—a 3% improvement over previous methods.
- **CAPTCHA Recognition From Audio Using WhisperAI And OCR**
 - Transcribed CAPTCHA audio with Whisper AI, achieving 79.5% accuracy, identifying 5 out of 6 characters on average.
 - Preprocessed 10,000 audio samples, applying volume normalization and loudness adjustments to improve transcription quality.
 - Evaluated accuracy using Character Error Rate (CER), addressing misheard words and OCR inaccuracies, with room for improvement.
- **Distance-Based Probability Modeling for Autonomous Overtaking Decisions on Double-Lane Highways Using Object Detection**
 - Developed a vision-based autonomous overtaking system using a custom dataset tailored to Bangladesh's roads for better adaptability.
 - Enhanced lane detection with optimized preprocessing and improved object identification through YOLOv3-based distance estimation.
 - Advanced models with probability-based safety evaluation, assessing overtaking feasibility and providing real-time feedback for safer maneuvers.
- **Image Based Plant Disease Classification Based On CNN and Deep Learning Techniques Through Knowledge Distillation**
 - Developed a smartphone-assisted crop disease diagnosis system using deep learning on 55,562 images, classifying 12 crops and 26 diseases with high precision.
 - Improved efficiency with KD, training a lightweight model that achieved 78.1% accuracy, close to the teacher model's 80.1%, while reducing complexity.
 - Optimized deep CNNs for on-device diagnosis, gaining 2% accuracy with a simpler model, making AI-powered crop disease detection more accessible and efficient in regions with limited infrastructure.
- **Machine Learning Approaches For Immune System Analysis And Modelling**
 - Developed an AI-driven HIV detection system using XGBoost, KNN, Decision Trees, Random Forests, and Logistic Regression, optimizing accuracy with CD4 and CD8 datasets.
 - Improved performance through hyperparameter tuning, achieving 86.68% accuracy with Gradient Boosting and 86.21% with LightGBM, minimizing variance between training and validation.
 - Enhanced interpretability with SHAP values, offering explainable AI insights into key biomarkers, making diagnostics more reliable and actionable.

- **Data Management & Visualization**
 - Data Science Engineering
 - Image, Text & Audio Processing
 - Pandas, Apache
 - NumPy, Matplotlib
 - SQL, Firebase, MongoDB
- **Web & App Development**
 - HTML
 - CSS
 - XML
 - Android Studio
 - Flask
 - FastAPI Integration
- **Soft Skills**
 - Teamwork
 - Research Skills
 - Project Coordination
 - MS Office
 - Git Version Control
 - Teaching

LANGUAGES

- English (Fluent)
- Bengali (Fluent)

PROJECTS

● Respire Check

- A web-based application built with Python, HTML, CSS, and Firebase, enabling real-time chest X-ray analysis for COVID-19, pneumonia, and tuberculosis detection, where we integrated the AI-powered diagnostic pipeline.
- Deployed models via API integration, incorporating Grad-CAM for explainability, ensuring transparent AI-driven diagnostics and enhanced user interpretability.

● TownTrek

- A Java-based Android app for local tourism, integrating Firebase authentication and Google Maps APIs for location services.
- It features OpenWeatherMap for real-time weather, a custom dataset, and CSV-based tourist spot details, with XML UI and robust API handling via Volley and Retrofit.
- Users can log in, explore places, get directions, and access weather updates.

● OVS (Online Voting System)

- Developed an Android-based online voting system allowing registered voters to cast votes remotely.
- Enhances accessibility, reducing congestion and errors in vote counting.
- Ensures security and flexibility, using Java for development, SQLite for the database, and Firebase as the server.

● FoodPicky

- Enables seamless online food ordering, featuring secure login, menu browsing, order tracking, and an admin dashboard.
- Built with PHP, MySQL, and AJAX, it supports real-time order management and secure payments.
- Easy deployment using XAMPP/WAMP, requiring database import and config setup.

CERTIFICATES & AWARDS

CERTIFICATES

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| ● Pearson Edexcel International GCSE | JUNE 2017 |
| ● 8th Bangladesh Chemistry Olympiad | AUG 2017 |
| ● Pearson Edexcel International Advanced Level | OCT 2019 |
| ● NSU ACM Student Chapter Club | JULY 2022 |
| ● CareTutors Certificate of Tutoring | FEB 2025 |
| ● NLP and Text Mining - Simplilearn | MAR 2025 |
| ● Introduction to Data Science - Simplilearn | MAR 2025 |
| ● Generative AI for Beginners - Great Learning | MAR 2025 |

AWARDS

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| ● Daily Star High Achievers Award for O Levels | JAN 2018 |
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REFERENCES

Dr. Shahnewaz Siddique

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