# Towhid Ahmed

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## Summary

Software Engineer with strong problem-solving skills and hands-on experience building ML and DL models using TensorFlow, Keras, and Scikit-learn. Skilled in Java, Python, OOP, SQL, and Data Structures, with 500+ solved problems across LeetCode and GFG. Developed real-world neural network models including CNNs, ANNs and and recommendation systems. Self-taught and committed to writing clean, efficient, and scalable code.

## Technical Skills

- Programming Language: Java, Python
- Backend & API: FastAPI and REST API
- Core CS: Data Structures & Algorithms, OOP, SQL Queries, Operating Systems, Database Management, Computer Networking
- ML/DL: Supervised, Unsupervised, Scikit-learn, CNN, ANN, RNN, TensorFlow, Keras
- Tools & Platforms: Git, GitHub, Linux, VS Code, Jupyter Notebook
- Low Level Design: SOLID Principles, Singleton, Factory, Strategy, Observer, Decorator, Adapter
- Other: Problem Solving, System Design Basics

## Open Source Projects

### Movie Recommendation System   GitHub Link

- Built a content-based movie recommendation system using Python, Pandas, NumPy, Scikit-learn, and Streamlit.
- Applied text preprocessing, feature extraction (CountVectorizer), and cosine similarity to recommend top 5 similar movies.
- Developed an interactive web app and deployed it on Render for real-time usage.

### Face Mask Detection (CNN)   GitHub Link

- Developed a deep learning CNN using TensorFlow/Keras and OpenCV to detect mask usage, achieving 92.19% accuracy.
- Performed data preprocessing, resizing, normalization, and augmentation on facial images for robust training.
- Built an interactive system capable of testing new photos and visualizing training performance.

### Customer Churn Prediction (DL)   GitHub Link

- Designed an Artificial Neural Network using TensorFlow/Keras to analyze telecom customer behavior and achieved 79.33% accuracy.
- Performed extensive data cleaning, feature engineering, one-hot encoding, and MinMax scaling to prepare high-quality training data.
- Achieved 79.33% test accuracy and visualized model performance using confusion matrix and classification metrics.

### Sms/Email Spam Classifier   GitHub Link

- Engineered an NLP-based classification system using TF-IDF, Naive Bayes, SVM, and ensemble methods to detect spam with high reliability.
- Enhanced performance from 93.62% to 97.969% by tuning hyperparameters, adding numerical features, and applying Voting & Stacking ensembles.
- Completed full pipeline: data cleaning, text preprocessing, EDA, feature extraction, model evaluation, and visualization with Matplotlib/Seaborn.

## Training & Certifications

Java & Python Programming Training (6 Months) - Eshikon.com | Skills: Core Java, Python Basics, DSA Fundamentals
Machine Learning & Deep Learning Course — codebasics (YouTube Channel)
Skills: ML Algorithms, Data Preprocessing, Neural Networks, CNN, ANN

## Education

Bachelor of Business Administration (BBA) – Management
NagirHat College, Chittagong Bangladesh          2nd Year (Ongoing), Expected Graduation: 2028

## Achievements

- Solved 500+ DSA problems (LeetCode + GFG)
- Built top ML/DL projects including CNN and ANN models
- Self-taught technical skills while pursuing a non-CS degree.