Abdullah Bin Noor Tazim

Machine Learning Engineer

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Professional Summary

Final-year Computer Science student with hands-on experience in data-driven problem solving and end-to-end machine learning workflows. Skilled in data preprocessing, statistical analysis, feature engineering, and building predictive models using Python and modern ML frameworks. Experienced in deploying data-powered applications with FastAPI and Docker. Passionate about uncovering insights from complex datasets and leveraging data to drive intelligent decision-making.

Skills Summary

Programming: Python, C
Machine Learning & AI: PyTorch, TensorFlow, Scikit-learn, Hugging Face.
NLP & LLMs: LangChain, RAG , ChromaDB, Ollama
DevOps & Deployment: Docker, AWS (EC2), Flask, FastAPI
Data Tools: Pandas, NumPy, Matplotlib, Seaborn
Project Management & Version Control: Git, GitHub, Jira, Notion, Trello.

Work Experience

Elvvo Pathways (Remote, Kairo, Egypt) *Oct 2025 – Present*
NLP Engineer Intern

- Develops and optimizes language models for tasks such as text classification, topic modeling, sentiment analysis, and summarization.
- Designs end-to-end NLP pipelines, including data cleaning, tokenization, lemmatization, embedding generation, and model deployment.
- Apply machine learning and deep learning techniques (e.g. LSTM, Transformers, BERT) to extract insights from unstructured text data.
- Evaluates and fine-tunes models using metrics like accuracy, F1-score, ROUGE, and Coherence to ensure reliability and interpretability..
- Builds scalable, production-ready NLP systems using frameworks such as Hugging Face, spaCy, TensorFlow, and PyTorch.

CodeAlpha (Remote, Lucknow, India) *Aug 2025– Present*
Machine Learning Intern

- Developed and fine-tuned machine learning models using Python, using libraries such as Scikit-learn, Pandas, and NumPy to build robust data-driven solutions.
- Multiple algorithms were implemented and compared, including Linear Regression, Decision Trees, and K-Nearest Neighbors (KNN), to identify optimal approaches for predictive performance on structured datasets.
- Executed comprehensive data pre-processing workflows, including data cleaning, encoding, scaling, outlier detection, and feature engineering to enhance model accuracy and interpretability.
- Conducted model evaluation and performance tuning using metrics such as accuracy, precision, recall, F1-score, and cross-validation to ensure generalization and reliability.
- Collaborated in weekly code reviews and knowledge-sharing sessions with peers and mentors, contributing to continuous improvement, team learning, and adherence to best coding practices.

Neurochip Industries Ltd. (Remote, Dhaka, Bangladesh) *Jan 2024 – March 2024*
Trainee

- Assisted in the design and development of internal ERP modules for inventory, HR, and task management.
- Contributed to testing and debugging core functionalities to ensure system reliability.
- Used Jira for sprint planning, task tracking, and team collaboration in an Agile environment.

Machine Learning Projects

- **Topic Modeling on News Articles :** Built an NLP pipeline using LDA and NMF to extract latent topics from 10K+ news articles, achieving Coherence: 0.73 and Topic Diversity: 0.92. Optimized text preprocessing (tokenization, lemmatization, noise filtering) improving topic quality by $\tilde{1}8\%$. Designed a modular, YAML-driven pipeline with logging and model registry for reproducible experimentation. Code

- **Credit Risk Prediction (Ensemble ML: LightGBM + XGBoost) :** Built a credit risk prediction system using ensemble models (LightGBM + XGBoost), achieving F1-score: 96.1% and AUC ROC: 0.9888, significantly improving prediction reliability. Reduced false negatives by 16%, directly enhancing detection of high-risk borrowers and lowering potential default exposure. Designed a robust preprocessing pipeline (categorical encoding, missing value imputation, risk binning) that improved F1 by +8%, yielding a 14% lift vs. baseline models. Developed a production-ready ML pipeline (ETL → training → evaluation → deployment), making it suitable for fintech loan approval systems . Code

- **Text Summarization Using Pretrained Transformers :** Built an abstractive summarization system using BART and T5, generating concise summaries from long documents. Improved model performance by 20% , retaining key information while reducing content length by $\tilde{3}0\%$. Implemented an optimized preprocessing and tokenization pipeline for efficient model input and fast experimentation. Code

- **Alzheimer Disease Detection Using Hybrid CNN–Quantum Neural Network :** Designed a hybrid learning framework integrating PQCs with classical neural layers for Alzheimer's disease classification. Utilized rotation-based quantum encoding and CZ entanglement to capture complex feature correlations beyond classical limits. Achieved 98% overall accuracy, improving classification stability by +5% compared to baseline CNNs. Leveraged TensorFlow + Qiskit integration for hybrid training and quantum parameter optimization . Code

- **Heart Disease Risk Prediction :** Built a stacked ensemble classifier (Random Forest, Logistic Regression, Gradient Bosting) achieving AUC-ROC: 0.97, F1: 0.95, and Recall: 94% . Boosted F1 by $\tilde{1}4\%$ over baseline through pipeline engineering (categorical encoding +4%, imputation +5%, KMeans risk binning +6%) and hyperparameter tuning (+6%). Deployed via Flask for real-time, millisecond-level predictions, enabling seamless integration into clinical decision support workflows. Code

- **Student Performance Prediction :** Developed a machine learning model to predict student academic performance using demographic, behavioral, and academic features. Evaluated multiple algorithms Linear Regression, Decision Tree, and others to compare predictive accuracy and generalization ability. Code

Education

University of Liberal Arts Bangladesh (ULAB) *Feb 2022 – Present*
Bachelor of Science in Computer Science and Engineering (CSE)
CGPA: 3.48 / 4.00
Relevant Courses:

- **Machine Learning & AI**: Machine Learning, Artificial Intelligence, Digital Image Processing
- **Mathematics & Algorithms:** Statistics & Probability, Data Structures & Algorithms, Software Engineering
- **Core Computing:** Differential & Integral Calculus, Linear Algebra.

References

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