Tahajib Jakir Khan

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TECHNICAL SKILLS

Technological Proficiency

• **Machine Learning:** Deep Learning Algorithms (Convolutional Neural Networks, Adversarial Robustness, Generative AI, Federated Learning, LLM), Data Analysis, Decision Analysis, and Statistical Analysis.
• **Packages:** Keras, Tensorflow, Sci-kit learn, Hugging Face Transformers, LangChain, Gradio.
• **Analytical Tools & clouds:** PowerBI, Tableau, AWS, CleverHans.
• **Data Structures and Algorithms:** Data structures, Graph Theory, Trees, Linked Lists, Stacks & Queues, Hash Maps.
• **Programming Language:** C, C++, Python.
• **Other Technical Skills:** Git, Latex, Arduino, Microsoft Word, Excel, PowerPoint, Access.

WORK EXPERIENCE

🏢 **CODSOFT** – KALKATA, INDIA

DATA SCIENCE INTERN (REMOTE) – 20/03/2025 – CURRENT

• Assist in collecting, cleaning, and analyzing large datasets to extract meaningful insights and support data-driven decisions.
• Develop and implement machine learning models and statistical analyses under the guidance of senior data scientists.
• Create data visualizations, dashboards, and reports to communicate findings effectively to technical and non-technical stakeholders.

PROJECTS

01/07/2024 – 22/11/2024
Federated Learning to betel leaf Disease Classification using BetelNet-10 Model

• Developed BetelNet-10, a lightweight CNN model for classifying betel leaf diseases in a federated learning environment, ensuring privacy-preserving training across five decentralized clients.
• Collected and preprocessed 5,000+ betel leaf images, applying techniques like scaling, augmentation, and normalization to enhance model generalization and accuracy.
• Conducted a comparative analysis with VGG19, VGG16, and ResNet50, optimizing BetelNet-10 for computational efficiency and deployed a real-time AI application for betel farmers to enable disease detection and precision agriculture.

Research paper in progress for publication

Link https://github.com/Tahajibjakir/Federated-Learning-to-Betel-Leaf-Disease-Classification-using-BetelNet-10-Model.git

05/02/2024 – 12/05/2024
Adversarial Robustness to disease classification by Hybrid CNN-LSTM model

• Developed a hybrid CNN-LSTM model for betel leaf disease classification, implementing adversarial training with Projected Gradient Descent (PGD) and generating adversarial examples using CleverHans to improve robustness.
• Trained and evaluated the model on natural and adversarial datasets, utilizing data augmentation and performance analysis tools (confusion matrices, loss curves) to assess accuracy degradation under attack.
• Leveraged TensorFlow, Keras, and Google Colab for efficient model building, fine-tuning, and performance comparisons between adversarial and natural accuracy.

Research paper in progress for publication

Link https://github.com/Tahajibjakir/Adversarial-Robustness-for-Agricultural-and-Medical-Dataset-Research_Paper_Based.git

13/03/2025 – 17/03/2025
Generative AI-Powered LLM for Intelligent Text Generation

• Implemented a Transformer-based NLP pipeline using Hugging Face and LangChain for text generation with GPT-2.
• Optimized model performance by leveraging TensorFlow backend and ensuring seamless execution on GPU/CPU.
• Integrated pre-trained language models for efficient text generation while maintaining flexibility in model selection.
• Enhanced automation and inference speed by structuring a robust pipeline for scalable AI-driven applications.

Link https://github.com/Tahajibjakir/Generative-AI-Powered-LLM-for-Intelligent-Text-Generation.git

04/10/2024 – 11/10/2024
Transaction Insights- Credit Card Transaction Analysis by Power BI

• I Integrated customer demographic and transactional data, using Power BI to create dynamic dashboards that correlate customer profiles (age, income, marital status) with credit card usage trends and transaction volumes.
• Analyzed customer-centric factors (e.g., income, education) and credit card transaction methods (e.g., Swipe, Online) to identify revenue drivers, and card preferences, and support strategic decision-making.
• Designed KPIs to track performance metrics (total revenue, transactions, customer segmentation), and analyzed weekly and quarterly trends to uncover spending patterns for predictive planning and targeted marketing.

Link https://github.com/Tahajibjakir/Data-Insights_Power-BI-Projects.git

05/01/2025 – CURRENT
Earnings Explorer_Interactive Salary Dashboard by Tableau

• Designed an interactive Tableau dashboard to analyze salaries across job roles, experience levels, and remote work ratios, offering insights into global compensation trends for informed decision-making.
• Visualized and integrated data on salary distribution, top-paying roles, and geographical salary variations, including remote work and company size, to uncover meaningful patterns.

Link https://github.com/Tahajibjakir/Data-Analysis_Tableau-Project.git

EDUCATION AND TRAINING

01/09/2020 – 31/12/2024 Ashulia, Savar, Dhaka, Bangladesh
BACHELOR IN COMPUTER SCIENCE AND ENGINEERING Daffodil International University

Website www.daffodilvarsity.edu.bd | **Field of study** Science and Information Technology | **Final grade** 3.79 |

Level in EQF EQF level 6 | **Thesis** Federated Learning to Betel Leaf Disease Classification using BetelNet-10 Model

01/07/2017 – 30/04/2019 Natore, Rajshahi, Bangladesh
HIGHER SECONDARY CERTIFICATE Qadirabad Cantonment Sapper College

Final grade 5.00 out of 5.00 | **Level in EQF** EQF level 4

01/01/2007 – 28/02/2017 Natore, Rajshahi, Bangladesh
SECONDARY SCHOOL CERTIFICATE Gopalpur High School

Final grade 5.00 out of 5.00 | **Level in EQF** EQF level 3

LANGUAGE SKILLS

Mother tongue(s): **BENGALI**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

PROFESSIONAL ASSOCIATIONS & ACTIVITIES

10/08/2022 – 31/12/2024
DIU Datathon

Participated in machine learning, AI, data science, and NLP challenges, collaborating on real-world data-driven projects and model development.

05/10/2020 – 31/12/2024
DIU CPC

Engaged in competitive programming, algorithm problem-solving, and hackathons to enhance coding proficiency and teamwork.