# Dweepayan Kar

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## Technical Skills

Python, C/C++, SQL, Scikit-learn, Pandas, NumPy, TensorFlow, Keras, Hugging Face, LLMs

## Projects

**Credit Card Fraud Detection using ANN** | Python, Pandas, TensorFlow, Jupyter Notebook Mar-May 2025

- Developed and optimized an Artificial Neural Network (ANN) for detecting fraudulent credit card transactions with **>99% accuracy** and low false positive rate.
- Executed comprehensive data pre-processing including feature selection, missing value handling, and encoding categorical variables using one-hot and label encoding.
- Applied train-test split, data balancing, and model validation techniques to improve model robustness and generalisability.
- Evaluated model performance with confusion matrix, precision, recall, and F1-score metrics; implemented the full pipeline in an interactive Jupyter notebook.

**Pic Geny** | Python, PyTorch, Diffusers, Transformers, Stable Diffusion, Computer Vision Jul-Sep 2024

- Developed a robust text-to-image generation system using Stable Diffusion and transformers, enabling high-quality image synthesis from natural language prompts.
- Implemented custom configuration for model inference including seed control, guidance scale, and image output dimensions to optimize generation quality and consistency.
- Leveraged GPU acceleration and mixed precision (fp16) techniques for efficient large-scale model deployment on CUDA devices.
- Created modular Python pipeline integrating Hugging Face Diffusers and Transformers libraries, enabling scalable and reproducible text-to-image generation workflows.

**Face Recognition Attendance System** | Python, OpenCV,face recognition, dlib,Machine Learning Feb-Apr 2023

- Developed an automated attendance system leveraging deep face recognition techniques using the dlib-powered face recognition library for high-accuracy, **99.38% accuracy** handling real-time identification and tracking of multiple faces.
- Implemented real-time face detection and recognition from webcam video streams, integrating OpenCV for image preprocessing and visualization.
- Engineered a robust pipeline to extract face encodings, match identities against a known database, and log attendance data with accurate timestamps.
- Utilized efficient Python scripting and environment management to ensure seamless deployment, achieving around 99% recognition accuracy in diverse conditions.

## Certifications

Generative AI with Large Language Models – Deeplearning.AI Aug 2025

## Education

**Vellore Institute of Technology** Nov 2022 – 2026

*Bachelor of Technology in Computer Science and Engineering*

*Specialization in Artificial Intelligence and Machine Learning*

CGPA: 8.32

## Extra-Curricular Activities

**Tech Lead, North-East Club**
Led technical events team, attracting 500+ participants and strengthening club reputation.

**Runner-up in IDEATHON '22**
Awarded for innovative AI/ML solution improving students' academic workload management.