Nimish Duggal

Github | Portfolio | LinkedIn | Leetcode | CodeOlio | CodeForces | 7740016970 | nimishduggal.job@gmail.com

EDUCATION

Thapar Institute of Engineering and Technology   **Patiala, Punjab**
BTech in Computer Science and Engineering (GPA: 9.43)   *Graduation: July 2026*

WORK EXPERIENCE

IDEA Foundation   **August 2024 - February 2025**
Data Science Intern   *Certificate (Remote)*
- Optimized and deployed an AI-powered content generation agent leveraging **CrewAI, OpenAI, and Docker**, enhancing automation efficiency. Designed and implemented a seamless pipeline to automatically publish generated blogs to Shopify, reducing content creation and posting time **from 7 minutes to under 4 minutes**.
- Developed key backend components for an **invoice automation system** using **FastAPI, Google Vision API, and PostgreSQL**, contributing to the successful digitization of diverse invoice formats to **eliminate manual data entry**.
- Built AI Agents for an AI-driven question paper generator using **LangGraph** and **Llama3** models, automating syllabus-based question creation.

PROJECTS

Multilingual RAG System   **Github**
Python, LangChain, FAISS, PyTesseract, HuggingFace Transformers (e5), LLMs, Gemma3, FastAPI
- Designed a CPU-friendly, multilingual RAG pipeline to perform document-based question answering in Punjabi, Hindi, and English.
- Engineered a data processing pipeline using **PyTesseract**, **IndicTrans2**, and **LangChain** to perform OCR, translation, and vectorization, storing embeddings in language-specific **FAISS** indexes.
- Developed and deployed the complete application with **FastAPI**, integrating a **Gemma 3B** LLM to provide an end-to-end document ingestion and query-based answer generation service.

AI-Powered Waste Management Platform (JPMorgan Chase - Code for Good 2025)
LangGraph, Python, AI Agents, Next.js, Twilio, Appwrite, HTML, CSS, FastAPI
- Selected as one of under 500 participants from a pool of over 50,000 applicants for this prestigious hackathon.
- In collaboration with the NGO **Waste Samaritan**, developed a comprehensive platform to boost community waste segregation using features like gamification leaderboards and a multi-lingual IVR system.
- Owned the development of the solution's core AI component, creating a sophisticated chatbot agent with **LangGraph** to handle complex user queries on waste management.

VibeSync - Facial Emotion Based Music Recommendation System   Hugging Face
Python, Tensorflow, Keras, ResNet50v2, OpenCV, Gradio
- Engineered and compared custom CNNs with a transfer learning model (**ResNet50v2**) to classify facial emotions, achieving 64% accuracy on a challenging multi-class dataset (FER dataset) by effectively mitigating class imbalance through data augmentation.
- Integrated the model with a pre-classified Spotify music library to provide real-time recommendations and deployed the complete, interactive application on **Hugging Face** using **Gradio**.

Body Fat Percentage Predictor   **Github**
Python, Streamlit, SciKit Learn, Kaggle   *Report*
- Developed a predictive model by training and evaluating three regression models (**KNN, Linear Regression, Random Forest**), selecting KNN as the optimal choice due to its superior generalization over the overfitting Random Forest model.
- Engineered a robust data pre-processing pipeline featuring **Z-score** outlier removal, **One-Hot Encoding** for categorical features, **Min-Max feature scaling**, and **correlation analysis** for feature selection.
- Designed and deployed a user-friendly **Streamlit** application to provide real-time predictions, making the model accessible to non-technical users for fitness tracking..

SKILLS & INTERESTS

Languages: Python, C, C++, SQL, HTML, CSS, JavaScript

Data Science & ML: NumPy, Pandas, Scikit-learn, TensorFlow, Keras, PyTorch, Langchain, LangGraph, Matplotlib

Web Development & Deployment: FastAPI, Streamlit, Node.js, EJS, Bootstrap

Databases: PostgreSQL, MySQL

Development Tools: Git, VS Code, Jupyter Notebook, Hugging Face, Docker

CO-CURRICULAR ACTIVITIES

- Solved 300+ problems on platforms like Leetcode, CodeStudio, GeekforGeeks etc.
- 5 Star (Gold Badge) in Python on HackerRank
- Rated 1054 on CodeForces

Google Developer Student Club, TIET   **Patiala, Punjab**
Finance Secretary   *Jul 2023 – Jun 2025*
- Organized Rapid Code 2024 as the overall event coordinator, leading a team and collaborating across departments, and conducted a Machine Learning workshop at GDSC Bootcamp 23.