

SHUBHAM BAGHEL

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LinkedIn

GitHub

Portfolio

LeetCode

GFG

EDUCATION


National Institute of Technology, Kurukshetra(3rd Year)

2023- –June 2027

B-Tech: Artificial Intelligence and Machine Learning




Kurukshetra, India

PROJECTS

Mini GPT | PyTorch, Deep Learning, Transformer Architecture  

Sept–Oct 2025

- Implemented the complete GPT-2 architecture (124M parameters) from scratch in PyTorch, including custom **tokenizer**, **embeddings**, and **dataloader** without relying on external libraries.
- Built the full **Transformer architecture**, implementing **Multi-Head Self-Attention**, **GELU activation**, **Layer Normalization**, and **residual connections** to match GPT-2's original design.
- Developed the end-to-end **text generation pipeline** with **autoregressive decoding**, **temperature sampling**, and integrated **LoRA finetuning** using open-source GPT-2 weights.

Job Ready AI  | Llama 3.3, LangChain, Streamlit  

Oct–Dec 2024

- Built an intelligent **RAG-powered assistant** using **Llama 3.3** and **LangChain** to dynamically generate **job-tailored resumes** aligned with target **keywords** and **JD requirements**.
- Expanded **functionality** to craft personalized **cover letters** and **cold emails**, and integrated an **ATS scoring system** for instant evaluation of resume effectiveness.
- Implemented **semantic resume analysis** using **Sentence Transformers** to extract strengths, weaknesses, and missing keywords, delivering actionable insights for career optimization.

Stable Diffusion XL Based Facial Aging System | Generative Deep Learning  

Nov 2025

- Developed a generative AI system using **Stable Diffusion XL (Image-to-Image)** that performs controllable facial aging and rejuvenation (15–75 years) by training **DreamBooth LoRA** models and mixing their weights while keeping identity intact.
- Fine-tuned diffusion models on the IMDB-Wiki dataset and experimented in **prompt engineering**, **model optimization**, **LoRA weight interpolation**, and **inference acceleration** to improve quality and speed.
- Built the complete AI application pipeline: dataset preprocessing scripts and LoRA training using HuggingFace Diffusers and Accelerate.

WORK EXPERIENCE

National Institute of Technology, Kurukshetra-ISRO Funded Project 

Dec 2024 – April 2025

Undergraduate Research Assistant

Kurukshetra, India

- Conducted research on GNSS anti-jamming, recovering signals from stronger interference.
- My contribution involved analyzing RC, MLP & LSTM performance against various jamming types.
- Contributed by building the data pipeline to process raw GNSS I/Q signals for the project.

TECHNICAL SKILLS / COURSEWORK


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

Frameworks: PyTorch, TensorFlow, Scikit-learn, LangChain, Hugging Face, FastAPI, OpenCV

Developer Tools: VS Code, PyCharm, GitHub, Postman, Google Colab, Microsoft Azure, Ollama, Cursor

Core Coursework: DSA , Operating Systems, DBMS, OOP, Machine Learning, Deep Learning, Generative AI (LLMs & RAG), Computer Vision, Data Visualization

ACHIEVEMENTS / CERTIFICATIONS

- **Hackathon Winner:** Awarded **1st Place** at **Productathon** (NIT Kurukshetra Startup Cell) for creating 'Job Ready AI', an LLM-powered application that automatically tailors resumes for job applications. 
- Solved over **300+** **Data Structures & Algorithms problems** on [LeetCode](#) and [GeeksforGeeks](#).
- **Hackathon Leadership:** Served as the **Team Leader** in multiple hackathons, including **Productathon**, **Smart India Hackathon**, **Google Developer Solution Challenge**, **Excalibur**, **Agentic AI Day**.
- **Certifications:** Machine Learning with Python (FreeCodeCamp), Generative AI with Large Language Models (Coursera), Supervised Machine Learning (Coursera), Microsoft Azure AI Fundamentals (AI-900), Smart India Hackathon, Google Developer Solution Challenge, Google Agentic AI Day.