

Muhammad Asad Ullah

Lahore, Pakistan | asadsagheer243@gmail.com | github.com/PypCoder | huggingface.co/PypCoder

SUMMARY

ML/AI Engineer with a track record of building and shipping production systems independently, not just notebooks. Designed and trained SERAPH, a custom ESM2 + CNN + BiLSTM protein structure predictor hosted on HuggingFace, and deployed a multi-agent LLM research pipeline used in the real world. Comfortable across the full stack, but the core is AI: model architecture, training pipelines, and getting things into production fast. 3rd-year IT student at UMT Lahore, but the work speaks louder than the degree.

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL, HTML, CSS, Rust (basic), C++ (basic)

ML & AI: PyTorch, TensorFlow, HuggingFace Transformers, LangChain, LangGraph, scikit-learn, NumPy, pandas, ESM Embeddings, CNN, BiLSTM, Gemini API, OpenAI API, Anthropic API, Agentic AI, RAG, GenAI

Web & Backend: Next.js 15, React, Node.js, FastAPI, Flask, Supabase, PostgreSQL, SQLite

Tools & Platforms: Git, GitHub, Google Colab, Streamlit Cloud, Vercel, Docker (basic)

PROJECTS

Neural Network from Scratch | *Python, NumPy*

[PypCoder/Neural-Network-from-Scratch](#)

- Implemented a fully modular neural network from first principles using only NumPy, building forward/backpropagation, Adam optimizer, Batch Normalization, Dropout, and learning rate decay with zero ML framework dependencies.
- Achieved 97.93% test accuracy on MNIST and 100% on XOR using a composable, layer-based architecture (Dense, BatchNorm, ReLU, Dropout, Softmax) that mirrors modern framework design.

MutantScope | *FastAPI, Next.js 15, ESM2, CNN, BiLSTM, Gemini API*

[PypCoder/MutantScope](#)

- Built SERAPH, an original deep learning model (ESM2 + Conv1D + BiLSTM) trained on CullPDB for protein secondary structure prediction, achieving 75.31% Q3 accuracy; hosted on HuggingFace.
- Integrated SERAPH into a full-stack platform (FastAPI backend, Next.js 15 + Tailwind v4 frontend) that fetches sequences from AlphaFold DB, diffs mutant vs. wild-type structure predictions, and uses Gemini AI to generate natural-language explanations of each mutation's impact.

AI Business Analyzer | *Python, LangChain, Gemini API, Streamlit, SQLite*

[PypCoder/AI-Business-Analyzer](#)

- Designed a multi-agent pipeline (planner, researcher, aggregator, reporter, summarizer) that generates structured business intelligence reports with SWOT analysis, competitor landscape, and a 30-60-90 day action plan from a single prompt, using live web search via Serper.dev.
- Added SQLite-backed report history, PDF export via fpdf2, and a follow-up chat interface powered by the Anthropic API; deployed to Streamlit Cloud and resolved production-only bugs around API key persistence and Pydantic validation.

EXPERIENCE

Freelance ML/Full-Stack Developer

Self-Employed

Independent Contractor

2024 – Present

- Built a Windows desktop application for a gold shop client using PySide6 and SQLite, integrating serial communication with an A&D GF-3000 precision balance to read live weight data and auto-generate printable invoices.
- Delivered end-to-end web applications across the stack (Next.js, FastAPI, Supabase) for local clients and personal SaaS projects.

EDUCATION

University of Management and Technology

Lahore, Pakistan

Bachelor of Science in Information Technology

Expected May 2027

- Currently in 3rd year, 6th semester
- Relevant coursework: Artificial Intelligence, Data Structures & Algorithms, Probability & Statistics, Linear Algebra, Database Systems, Software Engineering