# Mohammad Ayaan Anis Ahmad Shaikh

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## SUMMARY:

Machine Learning Engineer specializing in NLP systems, Reinforcement learning and production ML deployment. Built RAG-based document intelligence systems and real-time inference pipelines using Python, PyTorch, and FastAPI. Strong foundation in vector databases, embedding models, and low-latency API design.

## PROJECTS:

**DeepTrade – Reinforcement Learning Trading Agent | PyTorch, OpenAI Gym, Streamlit**
- GitHub
- Built **Deep Q-Network** agent achieving **3.49% returns** on test data, outperforming buy-and-hold by 16.5× and random baseline by 96% across 1,500+ trading days on Indian equity markets.
- Implemented Double DQN with experience replay (10K buffer) and target networks in PyTorch, using **13-dimensional state space** (**RSI, MACD, Bollinger Bands**) to optimize trading policies
- Resolved Q-value explosion and training instability through state normalization and gradient clipping; optimized agent from 96% passive to 30% active trading via reward tuning
- Deployed end-to-end pipeline with custom **Gym environment**, backtesting framework, and Streamlit dashboard; maintained proper train/val/test splits (70/15/15) to prevent leakage

**Insurance Document Q&A System with RAG Architecture | Python, Next.js, ChromaDB**
- Github
- Built an end-to-end ML system using LLMs and **semantic search** to automate insurance claim decisions from natural language queries.
- Implemented document chunking (500-char chunks), **sentence-BERT** embeddings (384-dim), and ChromaDB vector search achieving **80%+ accuracy** in entity extraction across **18 query formats**.
- Integrated OpenAI GPT-3.5 for intelligent decision-making with explainable clause-to-decision mapping.

**AI-Powered Mock Interview SaaS | Next.js, Supabase, Vapi SDK**
- Live Demo | Github
- Built real-time voice-based AI platform simulating role-specific mock interviews with low-latency interaction
- Engineered contextual feedback system providing actionable insights to improve user communication skills
- Designed analytics dashboard tracking interview sessions and performance metrics for continuous improvement

## EDUCATION:

**Bachelor of Technology -** *Walchand Institute of Technology, Solapur* | CGPA : 9.4 | Exp : 2027.
**Secondary(12th) -** *Walchand College of Arts and Science, Solapur.*

## SKILLS:

**AI/ML:** Scikit-learn, PyTorch, TensorFlow, Sentence-BERT, NumPy, Pandas, Matplotlib, Seaborn, Reinforcement learning.
**Programming:** Python (Advanced), C++, Java, JavaScript, TypeScript.
**Databases:** MongoDB, PostgreSQL, ChromaDB.
**Deployment & Tools:** Flask, WSGI, Docker, Git, GitHub.
**Web Technologies:** React.js, Next.js, Node.js, Express.js.
**Mathematics:** Statistics, Linear Algebra, Probability, Calculus

## ACHIEVEMENTS:

- Solved **350+ DSA problems** across platforms like LeetCode, Coding Ninjas, Code chef with a **Top 5% global ranking**
- Achieved a rating of **732 on codeforces** and a rating of **1041 on codechef**.
- CodeChef, Codeforces, Leetcode

## CERTIFICATIONS:

**Forage December 2025:** British Airways Data Science Job Simulation
**Udemy:** Complete Data Science, MAchine learning, DL, NLP Bootcamp by Krish Naik
**Infosys Springboard:** Machine Learning Foundation Certificate, Introduction to Data Science, Python Foundation Certificate
**NPTEL:** Soft Skills Development, Programming with Generative AI