Muhammad Moosa Bin Naseem

SOFTWARE ENGINEER · DATA SCIENTIST

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Skills

Deep Learning Frameworks	Pytorch, TensorFlow
Generative AI and LLMs	HuggingFace Transformers, LangChain, Agents, MCP
Programming and High-Performance Computing	Python, C++, CUDA, Rust
MLOps and Quantization	Llama.cpp, Ollama, ONNX, MLFlow
Back-end and Networking	Flask, Tokio, TCP/UDP, REST

Work Experience

Virtual Remittance Gateway (VRG) — AI Research and Development *Karachi, Pakistan*
DATA SCIENTIST *December 2024 — Present*
- Building AI powered solutions for Financial Institutions, with a focus on AI agents and NL2Code
- Locally deployed AI tools, such as **Coding agents powered by LLama.cpp**, to automate Data Analysis
- Technologies include **Python**, **Apache Kafka**, **ClickhouseDB**, **Redis**, **FastAPI**, **PyDantic**
- Training and Testing ML Models with **Huggingface Transformers**, **RiverML**, **ML Flow**, **PyTorch**
- Built an internal suite to automate daily reporting for State Bank of Pakistan and partner banks for regulatory compliance
- Building end-to-end high-performance and eXplainable systems for Financial Fraud Detection, Data Analysis and Cash-flow prediction in ATMs

Askari Technologies — Software Engineering Team *Karachi, Pakistan*
JUNIOR AI DEVELOPER *August 2024 — September 2024*
- Built multiple AI and software solutions for different international clients
- Built and Deployed a RAG pipeline for **Telecof**, for FAQs and appointment booking via WhatsApp. Deployed using **Digital Ocean and Twillio**
- Built high-performance APIs to transmit trading signals between different platforms e.g. **SierraCharts and MetaTrader5** with millisecond precision
- Wrote backend services and fine-tuned transformers using **C++**, **Python**, **PyDantic**, **Huggingface Transformers**
- Built an application to generate Arabic poetry for an educational institution, deployed using **IBM Watson**
- Built a bot to scrape and share trending videos from Youtube and Facebook using **Youtube Data API and GraphAPI**
- Worked on QR code generation and obfuscation with AI generated images

Gerry's — Software Engineering Team *Karachi, Pakistan*
WEB DEVELOPMENT INTERN *Fall 2023*

- Wireframed and Developed the frontend for Gerry's official website
- Worked on developing the frontend for a Gerry's group subsidiary

JS Bank Ltd. — Ancillary Apps Development *Karachi, Pakistan*
DATA ENGINEERING INTERN *Summer 2016*

- Wrote **SQL Queries** for Ad Hoc data extraction and manipulation
- Worked on **Microsoft SSIS and SSMS** to perform ETL processes and aggregations

Projects

Hades: AI Based intrusion detection system *(Paper)*
UNDERGRADUATE RESEARCHER
- Worked on core model training using LSTM-AE for feature compression and Catboost algorithm for classification
- Fine tuned and compared the hybrid learning technique with different machine learning algorithms
- Wrote backend services to transmit flagged IPs over to the dashboard

Pherrous: Distributed Network Computing Infrastructure *(Link)*
SOFTWARE ENGINEER
- Utilizing Rust to create a network computing system inspired by BOINC as a practice project
- Defined a network communication protocol to transmit files
- Currently working on a module to track computation progress and communicate results back to the host
- Utilizing Ratatui framework for user friendly TUI for the client and the server

Forex Trend predictor
DATA SCIENTIST

- Built a Forex prices and trend predictor using Bi-Directional LSTMs, achieving high accuracy over short term predictions
- Built the Neural Network using **PyTorch**, collected data on demand using **yFinance** and an interactive frontend with **Tkinter**

DOOM AI Agent
DATA SCIENTIST
- Trained an Agent via Reinforcement Learning to play the iconic DOOM 1993
- Utilized **Stable Baselines 3** to train the agent using **PPO** algorithm
- Used **VizDOOM** for environment models and **TensorBoard** for Visualization

Education

BS in Computer Science   *Karachi, Pakistan*
INSTITUTE OF BUSINESS MANAGEMENT, KARACHI   *2020 — 2024*
- **Relevant Coursework—** Machine Learning, Data Science and Analytics, Software Engineering, Computer Security, Programming Language Theory, Compiler Theory, Operating Systems and Networking, Cryptography, Networked and Distributed Systems
- **Thesis—** AI based Intrusion Detection System using Hybrid Learning