MUHAMMAD ASIM

Full Stack Engineer | Machine Learning Specialist

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PROFESSIONAL SUMMARY

Results-driven Full Stack Engineer and Machine Learning Specialist with 5+ years of professional experience building production-ready AI-powered systems, computer vision solutions, and scalable web and mobile applications. Proven track record delivering autonomous trading systems, SaaS platforms, and enterprise AI solutions for fintech and startup clients. Strong background in deep learning research at Pakistan's National Center for Cyber Security with published work in medical imaging and digital forensics. Expertise spans the full development lifecycle from ML model training and optimization through full stack application development, API design, containerized deployment, and cloud infrastructure on AWS.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, TypeScript, SQL, HTML, CSS
Machine Learning / AI: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing (NLP), Large Language Models (LLMs), TensorFlow, PyTorch, OpenCV, Scikit-learn, Pandas, NumPy
Web Frameworks: React, Next.js, Flask, Django, FastAPI, Node.js, Express.js
Databases / Data: PostgreSQL, SQLite, Supabase, MongoDB, Redis, Data Engineering, ETL Pipelines
Cloud / DevOps: Amazon Web Services (AWS), Docker, CI/CD Pipelines, GitHub Actions, Linux, Nginx
AI Platforms / APIs: Claude API (Anthropic), Google Gemini API, OpenAI API, LangChain, RAG Pipelines, Multi-Agent Systems, Prompt Engineering
Tools / Other: Git, REST APIs, WebSocket, Agile/Scrum, Technical Writing, Team Leadership

PROFESSIONAL EXPERIENCE

Full Stack Engineer

Private Fintech Client (Self-Employed) | Remote | December 2024 - February 2026

- Architected and built an autonomous trading strategy generator powered by the Claude API with multi-agent orchestration and RAG pipelines, reducing strategy development cycles from weeks to hours and generating 200+ strategy variants automatically
- Developed and deployed multiple market making bots for automated order management and liquidity provision on cryptocurrency exchanges, maintaining 99.5%+ uptime across 24/7 trading sessions
- Created a Hyperliquid on-chain analytics tool that crawls, indexes, and ranks 100K+ trading records to identify top-performing blockchain traders using multi-factor scoring algorithms
- Built a Brand Performance SaaS platform (React, Python) benchmarking brand perception across 5+ major AI models with automated evaluation pipelines and real-time dashboards, reducing manual brand auditing time by 90%
- Engineered a feature-rich iOS Personal Assistant app integrating AI image generation, meeting scheduling, VoIP calls, email, real-time chat with push notifications, and music playback
- Deployed scalable AI-native systems using Docker containers, CI/CD pipelines, and cloud infrastructure on AWS with automated monitoring and alerting

Full Stack Developer (Contract)

Korametrix | Remote | April 2025 - October 2025

- Led end-to-end design and delivery of an AI-powered accounting platform, translating complex business workflows into agentic AI solutions for automated document classification and financial data processing
- Built cloud-native APIs and microservices using Flask and Supabase with CI/CD pipelines and containerized deployment via Docker
- Designed and integrated AI agents to automate tax reporting, compliance checks, and data analysis, reducing manual accounting effort significantly
- Optimized database performance through query profiling, indexing strategies, and caching, reducing API response times by 45%
- Collaborated with cross-functional teams to refine requirements into technical specifications and ship production-ready features on schedule

Machine Learning Engineer

Private Fintech Client (Self-Employed) | Remote | October 2023 - November 2024

- Developed and trained ML models for financial price forecasting using OHLCV data with technical indicators using PyTorch and TensorFlow, achieving measurable improvements in prediction accuracy
- Benchmarked ANN, ARIMA, Prophet, and ensemble methods across diverse datasets, improving overall prediction accuracy by 18% through dynamic model switching
- Built an autonomous trading bot system running multiple ML models in parallel with a dry-run evaluation mechanism that dynamically switches to the best-performing model with zero downtime
- Exposed model inference via Flask-based REST APIs with model versioning, A/B testing, and real-time performance tracking dashboards

Research Associate

National Center for Cyber Security (NCCS), Pakistan | Islamabad, Pakistan | January 2022 - September 2023

- Led machine learning model development for image forgery detection achieving 95% accuracy, harmful object detection, and digital forensic analysis for national security applications
- Built scalable model training pipelines with automated data processing and augmentation, reducing model iteration cycles by 40%
- Led and managed a team of four developers on a full-stack mobile forensics application for digital evidence extraction and investigation
- Developed and deployed face mask detection, face recognition access control, and automatic number plate recognition (ANPR) systems at facility entry points
- Authored technical research papers published in peer-reviewed venues and conducted professional workshops on mobile forensics

Research Assistant

National Center for Cyber Security (NCCS), Pakistan | Islamabad, Pakistan | April 2021 - December 2021

- Developed deep learning models for person re-identification, face recognition, and object detection using PyTorch, TensorFlow, and OpenCV
- Built end-to-end ML pipelines for training, validation, and deployment on edge devices with optimized inference
- Developed NLP-based text classification models and image analysis systems for security and intelligence applications
- Contributed to mobile forensics applications for digital evidence extraction, chain-of-custody tracking, and forensic investigation

KEY PROJECTS

Automated Microscope for TB Detection

Lead ML Engineer | Air University (Master's Thesis) | 12 months

Designed an automated microscope system using deep CNNs to detect Mycobacterium Tuberculosis from sputum smear images. Achieved 95%+ detection accuracy and reduced slide analysis time from 30+ minutes to under 2 minutes, enabling processing of 50+ slides per hour versus 3-4 manually.

Technologies: Python, TensorFlow, Computer Vision, Deep Learning, Medical Imaging, CNN

AI Trading Strategy Generator

Full Stack Engineer | Private Fintech Client | 3 months

Built a multi-agent system using the Claude API with RAG pipelines to autonomously generate, backtest, and evaluate 200+ trading strategy variants. Reduced strategy development from weeks to hours. Client deployed 3 profitable strategies to production.

Technologies: Python, Claude API, Multi-Agent Systems, RAG, Algorithmic Trading

Brand Performance SaaS Platform

Full Stack Engineer | quietmountain.ai | 4 months

Developed a SaaS platform benchmarking brand perception across 5+ major AI models with automated evaluation pipelines, real-time dashboards, and historical trend analysis. Onboarded enterprise customers within the first month. Reduced manual brand auditing by 90%.

Technologies: React, Python, LLMs, PostgreSQL, Analytics, SaaS

Autonomous Trading Bot System

ML Engineer | Private Fintech Client | 8 months

Built a modular system running multiple ML models (ANN, ARIMA, Prophet, ensembles) in parallel with dry-run evaluation and dynamic model switching. Improved overall prediction accuracy by 18% with zero-downtime model rotation via Flask REST API.

Technologies: Python, PyTorch, TensorFlow, Flask, Machine Learning, Time Series Forecasting

Crypto Market Making Bots

Full Stack Engineer | Private Fintech Client | 6 months

Developed market making bots with WebSocket connections for real-time order book data, dynamic spread adjustment algorithms, and inventory management. Maintained 99.5%+ uptime across 24/7 trading sessions with real-time performance monitoring and alerting.

Technologies: Python, WebSocket, Algorithmic Trading, REST APIs, Automation

Image Forgery Detection System

Research Associate | National Center for Cyber Security | 10 months

Trained deep learning models for image tampering detection achieving 95% accuracy on forensic benchmarks. Built automated training pipelines reducing model iteration cycles by 40%. Integrated into NCCS digital forensics workflow and contributed to published research.

Technologies: Python, PyTorch, Deep Learning, Computer Vision, Digital Forensics

iOS Personal Assistant App

Full Stack Engineer | Private Client | 5 months

Engineered a feature-rich iOS application with AI image generation, meeting scheduling, VoIP calling, email integration, real-time chat with push notifications, and music playback in a single unified experience.

Technologies: iOS, Swift, AI APIs, Full Stack, Real-Time Communication

Person Re-identification System

Research Assistant | NCCS (Bachelor's Thesis) | 8 months

Developed a non-intrusive person tracking system using deep learning for visual feature extraction (clothing color, texture, gait patterns). Enables cross-camera matching without facial recognition for privacy-preserving security monitoring.

Technologies: Python, OpenCV, PyTorch, Deep Learning, Computer Vision, Feature Extraction

EDUCATION

Master of Science in Computer Science

Air University, Islamabad, Pakistan | 2018 - 2021

Thesis: Automated Microscope for Tuberculosis Detection using Sputum Smear

Focus: Computer Vision, Deep Learning, Medical Imaging

Bachelor of Science in Computer Science

Air University, Islamabad, Pakistan | 2014 - 2018

Thesis: Person Re-identification System

Focus: Machine Learning, Computer Vision, Software Engineering

CERTIFICATIONS AND ACHIEVEMENTS

- Published research papers on image forgery detection and computer vision at peer-reviewed venues
- Conducted professional workshops on mobile forensics at the National Center for Cyber Security
- Led a team of 4 developers on a full-stack mobile forensics application at NCCS
- 5-star rated freelancer on Fiverr with 20+ completed projects across AI, ML, and full stack development
- Consistently delivered projects ahead of deadlines with repeat client engagements across multiple countries

REFERENCES

Parker McAllister - Founder and CEO, quietmountain.ai
Managed Muhammad Asim directly on automated market making systems, AI-driven trading platforms, and real-time analytics tools.
Available via LinkedIn

Additional references available upon request.