

SULTAN ALSHAMSI

AI Platform & Infrastructure Lead | MSc Artificial Intelligence Candidate

Abu Dhabi, UAE • +971 50 822 6655 • sultan@salshamsi.com

salshamsi.com • github.com/alshamsi762 • linkedin.com/in/sultan-alshamsi

Profile

Infrastructure team lead with six years running mission-critical platforms at the Presidential Court, now building AI systems for production. Combines platform engineering (virtualization, Kubernetes, automation, monitoring and access governance) with applied machine learning: self-hosted LLMs and agentic systems, deep learning for derivatives pricing, and reinforcement learning for trading. MSc AI candidate at Khalifa University and former ADIA scholar, aiming to help an investment organisation run AI that is reliable, governed and secure.

Core Skills

AI & ML	PyTorch, scikit-learn, Hugging Face Transformers (FinBERT), Stable-Baselines3, Gymnasium; deep learning, reinforcement learning, NLP, time-series, Monte Carlo simulation
LLMs & Agents	Self-hosted open-weight LLM serving (vLLM, Ollama), LiteLLM gateway, OpenAI-compatible APIs, multi-agent orchestration, ReAct tool calling, FastAPI
Platform & Ops	VMware vSphere, Kubernetes (SUSE Rancher, kubeadm), Docker, Proxmox, Ansible, Linux/Windows, Active Directory/RBAC; SRE, monitoring and alerting, incident and change management
Programming	Python (pandas, NumPy, SciPy, asyncio), SQL, Bash, PowerShell, Git
Languages	Arabic (native) English (fluent)

Experience

Presidential Court

Abu Dhabi | 2019 – Present

Systems & Virtualization Lead (Team Lead)

- ▶ Lead the engineering team responsible for the enterprise virtualization platform behind mission-critical services, owning design, deployment, operations and lifecycle.
- ▶ Govern identity and access through Active Directory and role-based access control, applying least-privilege principles to sensitive systems.
- ▶ Automated provisioning, patching and health checks, replacing manual procedures with repeatable, auditable jobs and improving reliability.
- ▶ Designed KPI dashboards and anomaly monitoring that surface issues early and speed up root-cause analysis.
- ▶ Own incident and change management under strict change control; author the runbooks and documentation teams operate from.
- ▶ Mentor engineers and coordinate cross-team work on performance, capacity planning and business continuity.

Principal Financial Group

USA | 2017

Software Engineer Intern

- ▶ Migrated SQL reporting into a data mart, tuning joins and indexes to cut query latency; built and documented API integrations (MuleSoft → Apigee).

Abu Dhabi Investment Authority (ADIA)

Abu Dhabi | 2016

Developer Intern

- ▶ Built operational dashboards exposing virtual-machine performance bottlenecks and reliability targets to guide remediation.

Selected Projects

Khalifa University — MSc Coursework

Deep Learning for High-Dimensional American Option Pricing

COSC 612 | 2026 | Team of two

- ▶ Replaced the regression step of Longstaff–Schwartz Monte Carlo with a PyTorch neural network; benchmarked against the classical polynomial method on baskets of 1–100 correlated assets (50,000 paths).
- ▶ **181× faster at 100 assets** (39 s vs 1.9 h), with prices within \$0.50 up to 15 assets and within \$2 at 100.

Reinforcement Learning for Trading under Transaction Costs

COSC 604 | 2025 | Team of two

- ▶ Built a trading environment with costs, turnover penalties and position limits; trained PPO, DQN and a custom Double DQN with a strict time-based split.
- ▶ On unseen SPY data (Aug 2022 – Dec 2023), PPO reached a **Sharpe ratio of 1.61 vs 0.90** for buy-and-hold and a **max drawdown of –4.0% vs –12.9%**, at a lower total return (11.8% vs 20.1%).

Residential Sale-Price Prediction

COSC 606 | In progress

- ▶ ML pipeline on 1.19M Connecticut property sales: audited cleaning to 558k arm's-length residential sales, with target-leaking fields removed.
- ▶ Time-based train/validation/test split to prevent look-ahead bias; benchmarking linear, regularised and tree-based models.

Independent

Self-Hosted LLM Platform

Python | LiteLLM | Ansible

- ▶ Private, fully on-premises LLM service: open-weight models on two inference hosts behind a LiteLLM gateway with load balancing and fallback, exposed as one OpenAI-compatible API.
- ▶ Supporting lab infrastructure (Proxmox, kubeadm Kubernetes) built and rebuilt end-to-end with Ansible.

Offline Agentic Coding Assistant

Python asyncio | FastAPI

- ▶ Multi-agent system (orchestrator, planner, task manager, code and shell agents) with a sandboxed tool layer, approvals and undo, running entirely on local models.
- ▶ Implemented text-based ReAct tool calling for models without native function calling; CLI and web interface.

Multi-Agent Trading Research Stack

Python | FinBERT | IBKR API

- ▶ Modular pipeline from market and news ingestion through momentum/volatility factors, FinBERT news sentiment, volatility-targeted allocation and backtesting.
- ▶ Agent layer (screener, risk, bull-vs-bear debate) placing orders through Interactive Brokers paper trading, with a monitoring dashboard.

Education

Khalifa University

Abu Dhabi | 2025 – Present

MSc Computer Science, Artificial Intelligence concentration (part-time)

Purdue University

West Lafayette, IN | 2018

BSc Computer Science, Minor in Mathematics — ADIA Scholarship, 2013 – 2018