Shayan Shafquat

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Applied AI specialist with a track record of designing, building, and deploying production-grade AI/ML solutions. Expert in architecting end-to-end ML pipelines, cloud-native systems, and LLM-based applications that deliver business impact. Stays current with architectural advancements (e.g., MoE, attention mechanisms, multimodal LMs) & alignment techniques.

Work Experience

Allstate | SENIOR DATA SCIENTIST   Northern Ireland, UK (Hybrid) | Jan'25 – Present

- **Total Recall Integration**: Impact: Delivered **$1.35M** by on-demand grounded call summarization and analysis
  - Developed a **multi-agentic system** for bind obstacle classification & **recommendations**, to boost sales bind rate
  - Devised a scalable **evaluation framework**, incorporated **LLM-as-a-Judge**, consensus & nondeterminism tests
  - Built & deployed real-time contextual grounding **guardrail** & refined prompts with **tool call** for reliable insights
  - Orchestrated **jenkins pipeline** to manage docker images, API endpoint, **lambda deployment** & health monitors
  - Engineered data backend, managed **DB migrations** with alembic & real-time **replication** lambda for analytics
- Enhanced LLM-powered prototype with token-aware context handling, **map-reduce** summarization & **evaluation**
- Leveraged neural networks with **time-series** features and class imbalance, boosting total loss capture rate by **1.8%**

Enkrypt AI, Inc | AI RESEARCH CONSULTANT   Boston, US (Remote) | Jun'23 – Sep'23

- Developed a **malicious file scanner** for Python scripts and Jupyter notebooks to secure the ML lifecycle
- Tested LLM pipelines under **prompt injection** and **backdoor attacks** using Rebuff after curating adversarial datasets
- Designed a security layer using RAGAS and GuardRails to defend LLM pipelines from **toxicity, bias and jailbreaks**

ANI Technologies Private Limited (OLA) | DATA SCIENTIST   Bangalore, IN | Sep'20 – Jan'22

- **Pay after ride user identification**: Impact: Increased cashless ride by **5%** with no change in default rate (**2.5%**)
  - Enhanced the **feature store** API to analyze the behaviour of **15M+** users to establish trusted user base of 0.5M
  - Trained an **ensemble model** (balanced bagging classifier) on trusted users, achieving an **AUC score** of 0.91
  - Modeled **default likelihood** across non-trusted users, whitelisting **8.7M** while adhering to **risk** tolerance limits
- **Improvements in peak pricing module**: Impact: Reduced conversion prediction error by **2.2%**
  - Developed robust **fallback model** with recency weighting for real-time peak pricing during infra outages
  - Led the **dynamic pricing** automation for bikes using regression on spatiotemporal cab's **supply-demand signal**
  - Optimized modules for **hotspot pricing** and in-trip cab inclusion in **supply signal**, with automated reporting
- **User level pricing**: Impact: +1.5% GMV/bookings and improved net completion during COVID-19
  - Automated user-specific coefficients from conversion rates via **cron jobs**, enhancing **demand signal** accuracy
  - Validated fare sensitivity and quantified **churn risk** through a **control-test study**, driving pricing optimizations
- **Research:** Optimized traffic lights using a SUMO-based **Deep Q-learning** simulation, reducing wait times by **18.3%**

ANI Technologies Private Limited (OLA) | RESEARCH ENGINEER- INTERN   Bangalore, IN | May'19 - Jul'19

- Engineered driver login behaviour models using **decision trees** to segment cohorts, optimizing incentive allocation
- Conducted **A/B testing** on incentive strategies in Pune and Kochi, minimizing burn while maintaining engagement

Projects

- Developed **custom MCP** server for agent integration with **external tools**; market feeds, notion api & notifications
- Created **self-evaluating agents** using **LangGraph** with state management, feedback, browsing & persistent memory
- Built end-to-end **RAG** based research **Q&A application**, integrated with **search** API with automated evaluation
- Trained custom **CNNs** using **transfer learning**, optimized for **TPU** using **tflite** for real-time speed & angle prediction
- Trained **DQN, Q-learning** for 2D drone navigation using discretized action space(s) for rapid movement and landing
- Designed a **self-attention** model from scratch for bias classification of news (left-right), outperforming benchmarks

Key Technical Skills

Languages & Databases: Python, Postgres, SQL, Bash, R, C++, JavaScript, MATLAB
Frameworks & Libraries: PyTorch, Tensorflow, Scikit-learn, LangChain, LlamaIndex, RAGAS, PySpark, SciPy, Seaborn
Cloud & MLOps Platforms: Docker, Jenkins, Terraform, GitHub Actions, AWS (SageMaker, Bedrock), GKE, GCP
Development Tools & APIs: Strands, FAISS, CrewAI, Flask, Alembic, Apigee, FastAPI, Streamlit, Hugging Face, Ollama, Boundary

Education

MSc. Computational Neuroscience, Cognition and AI   University of Nottingham, UK | Sep'23 - Nov'24
Integrated MSc. Mathematics and Computing   IIT Kharagpur, IN | Jun'15 - Jun'20

Achievements

- Graduated with overall distinction; **highest thesis** marks for evaluating stochastic action selection in human foraging
- **GSoC' 22** (INCF): Converted & improved a multi-compartmental pyramidal cell model from NEURON to NeuroML