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Shah Nekouei

LLM Engineer | AI Systems Architect

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As an AI engineer with a deep interest in the foundations of intelligence and consciousness, I focus on building both theoretical frameworks and practical systems. I design and implement LLM architectures, create synthetic training data, fine-tune models, and develop retrieval and multi-agent pipelines. My work blends experimental engineering with conceptual inquiry, with an emphasis on building AI that empowers individuals and keeps advanced technology accessible rather than centralized.

Education

Master of Science in Data Science, *University of Colorado Boulder* — Fall 2025
Bachelor of Science in Business Marketing, *Metropolitan State University of Denver* — May 2021

Skills

LLM Engineering	Prompt engineering, instruction tuning, fine-tuning (LoRA/QLoRA), synthetic data generation, dataset architecture, small LLM optimization, multi-agent systems, sLLM routing architectures, inference optimization
NLP	TF-IDF, Word2Vec, BERT, Transformers, semantic search, RAG pipelines, text classification, sentiment analysis
Deep Learning	CNNs, LSTMs, optimization, model tuning, explainability (SHAP, EBM)
Machine Learning	XGBoost, Random Forest, Neural Networks, evaluation metrics, feature engineering
AI Data Architecture	Data modeling for LLMs, embedding pipelines, vector databases, data schema design, ETL for training corpora, knowledge organization
MLOps / Tools	Hugging Face, PyTorch, TensorFlow, Docker, GitHub Actions, FastAPI, Gradio
Algorithms & Data Structures	Complexity analysis, problem solving, LeetCode practice

Technical Experience

Abductive Event Reasoning (SemEval 2026 Task 12) — **Sep 2025 — Present**
CU Boulder Research Group — *Boulder, CO*
- Developing an abductive reasoning system to infer missing events from multi-document evidence.
- Building retrieval and ranking components to support hypothesis generation.
- Coordinating research workflows and baseline evaluations for team alignment.

Interview Outcome Prediction (Multimodal AI) — **Mar 2025 — Apr 2025**
CU Boulder Research Group — *Boulder, CO*
- Built multimodal models combining speech + text to predict interview performance.
- Applied interpretable ML methods to support transparent scoring.
- Delivered analysis summaries to guide model improvements.

Fake News Detector (AI System) — **May 2025 — Present**
Research Project — *Boulder, CO*
- Created an NLP system for political statement classification.
- Deployed a public-facing demo supporting real-time predictions.
- Designed a modular structure for integration into larger applications.

Wolfie: Emotion-Based Music Generation — **Mar 2025 — Present**
Independent Research — *Boulder, CO*
- Designed a model translating emotion inputs into expressive musical harmony.
- Built and labeled a MIDI dataset for emotional music modeling.
- Explored creative AI methods for symbolic music generation.

Lantern Intelligence: AI Accounting Assistant (SaaS) — **May 2025 — Present**
AI Systems Capstone Project — *Boulder, CO*
- Built an AI platform to automate accounting workflows through natural-language queries.
- Integrated with QuickBooks to support AP, AR, and payroll tasks.
- Designed a scalable structure supporting forecasting and business analytics.

Activities

Conducting theoretical and experimental research in LLM systems, AI architectures, and cognitive modeling	2025 — Present
Exploring multimodal machine learning with interests in reasoning, inference, and consciousness studies	2025 — Present
Developing Wolfie, an emotion-aware music generation framework using symbolic and deep learning methods	2025 — Present
Designing AI-driven business automation systems combining data science, NLP, and SaaS development principles	2025 — Present