Rohit Khadka

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Education

11/2023– 09/2026 (Expected)	**BSc (Hons) Computer Science**, *Herald College Kathmandu*, Kamalpokhari, Kathmandu Affiliated with University of Wolverhampton

Experience

04/2025– Present	**AI Fellow**, *Fusemachines* Selected from thousands for a prestigious AI fellowship focused on industry-grade AI systems. Engaged in a rigorous curriculum covering machine learning, deep learning, GenAI and real-world capstone projects under expert mentorship.
02/2024– 02/2025	**Data Fellow**, *Sunway Student Research Council (SSRC)* Selected from 650+ applicants for a competitive data science fellowship. Gained hands-on experience with statistical analysis, A/B testing, data visualization, and real-world student engagement projects.

Projects

LLM Ensemble: Multi-LLM Framework for Creative Mathematics Problem Generation

- Built a multi-LLM framework (GPT-4, Claude, LLaMA-3, Mistral) to generate, evaluate, and benchmark creative mathematics problems using prompt engineering and weighted scoring metrics.
- Synthesized outputs into curriculum-aligned, classroom-ready exercises; ongoing collaboration with editorial team for research paper submission.

Mental Health Chatbot using RAG

- Built an empathetic mental health chatbot leveraging RAG architecture with open-source LLMs from Hugging Face
- Used LangChain to orchestrate prompts, memory, and retrieval modules, and Pinecone vector database to store and query vector embeddings

Forex Prediction using Deep Learning (LSTM)

- Applied deep learning techniques to forecast forex currency pairs with historical time-series data
- Addressed challenges like stationarity and volatility spikes

Hybrid Foundation Model and Price Action Framework for Financial Forecasting with Uncertainty (Ongoing)

- Designing a hybrid AI system that integrates Time Series Foundation Model (TimeGPT) with Price Action features (candlestick structures, support/resistance, volatility regimes) to enhance interpretability and robustness of financial forecasts.
- Developing probabilistic forecasting pipeline with uncertainty quantification (conformal prediction, quantile regression) and trader-centric evaluation metrics (Sharpe ratio, Sortino ratio, Max Drawdown).

Publications

Under Review **LLM Ensemble: Multi-LLM Framework for Creative Mathematics Problem Generation**, *Ohio Journal of School Mathematics*
Authors: Rohit Khadka, Ashim Khatri
Conducted under the guidance of Prof. Michael Todd Edwards, this project proposes a multi-LLM system to generate curriculum-aligned, cognitively rich math problems. Research funded by the journal to support LLM experimentation and development.

Key Achievements

- National Delegate - MILSET Expo Sciences Asia, Asteroid Research Presentation, Team Leader, 2022
- Silver Medalist - American Math Olympiad organized by SIMCC and Southern Illinois University (SIU), Country Rank #3, 2023

Technical Skills

Programming & Core Technologies

Languages	Python, SQL
Machine Learning	Scikit-Learn, PyTorch, TensorFlow
Data Science	NumPy, Pandas, Matplotlib, Seaborn, SciPy, Statsmodels

AI & Specialized Tools

AI/NLP	LangChain, Hugging Face, LangGraph, Ragas
Databases	Pinecone, QuantDB
Development	Git & GitHub, Docker, REST API, FastAPI, React
MLOps	Weights & Biases

Languages

English	Advanced
Nepali	Proficient