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Hiring Manager
Da Vinci Trading
Amsterdam, Netherlands

Dear Hiring Team at Da Vinci Trading,

I am writing to express my profound interest in the Machine Learning / AI Engineer position. My background, which is deeply specialized in the intersection of **Quantitative Finance**, **CUDA Optimization**, and **Advanced AI Systems**, aligns precisely with your mission to build the future of intelligence in the markets. My proven track record of architecting and deploying high-performance models for real-time financial applications reflects the exact blend of skills you are seeking.

My experience directly addresses your need for developing models for signal generation and prediction in high-frequency environments. In my **Financial Signal Processing with GPU Acceleration** project, I engineered a real-time options pricing engine and a signal processing pipeline capable of handling high-frequency data streams with **sub-millisecond latency**. This project involved creating bespoke CUDA kernels for technical indicators and building a robust, distributed backtesting framework, demonstrating my ability to manage the entire lifecycle of a quantitative model from concept to risk assessment.

I possess the advanced skills in **high-performance computing (HPC)** and model optimization that are critical for gaining a competitive edge. My work on a **CUDA-Optimized LLM Inference Engine** showcases this, where I achieved a **3.2x speedup** over standard PyTorch operations by developing custom attention mechanism kernels and leveraging **TensorRT**. My expertise extends to the state-of-the-art techniques you prioritize, including implementing a **Graph Neural Network** framework from scratch in Rust, developing **Reinforcement Learning**-based algorithmic trading optimizers, and building multi-agent systems using **LLMs** and **RAG** architectures.

I understand that novel models are only as valuable as their implementation. My experience building a **Production-Scale NLP Analytics Platform** using **Docker**, **Kubernetes**, **PostgreSQL**, and **Airflow** has given me a solid foundation in production software development and MLOps principles. I thrive in collaborative, high-performance environments and am adept at communicating complex ideas clearly, ensuring seamless partnership with Quant Research, Trading Intelligence, and infrastructure teams to translate insights into robust, live strategies. My intellectual curiosity, evidenced by my Kaggle Master status and dual Amazon ML Summer Scholar selections, drives me to constantly explore and validate new ideas.

The opportunity to apply my skills at the pinnacle of technology and finance is exceptionally compelling, and I am eager to contribute to your team by tackling the unique challenges of the financial markets

Prabhakar Kumar