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To
Taylor Walker
Specialist, Internships & Work Integrated Learning
Vector Institute

Subject: Application for Applied Machine Learning Intern Position

Dear Taylor Walker,

I am writing to express my strong interest in the Applied Machine Learning Intern position at Vector Institute. As a Computer Engineering student at the University of Toronto with extensive experience in AI development and research, I am excited about the opportunity to contribute to Vector's mission of applying AI research to real-world problems.

At CASIA, I'm currently working on Medical multimodal large language models (MLLMs), where I've implemented and evaluated SOTA architectures using PyTorch, focusing on cross-modal attention mechanisms and medical knowledge integration. I've also engineered an end-to-end data pipeline for medical imaging benchmarks, resulting in a 75% reduction in processing time and 40% improvement in annotation accuracy. This experience has given me practical skills in handling real-world data and developing production-ready AI solutions.

My project portfolio demonstrates my ability to apply AI research to practical applications. At ReassurED, I implemented a dynamic triage system using Few-shot Learning with Deepseek-v3, while at YiXing, I designed and implemented a Retrieval-Augmented Generation (RAG) system using LangChain and vector databases. Both projects required working with messy real-world data and developing scalable solutions using modern AI frameworks.

I have extensive experience with Python, PyTorch, and TensorFlow, and I'm well-versed in agile development methodologies through my work at VolunTrack, where I led the development of a full-stack platform serving 100+ organizations. I'm particularly interested in large language models and deep generative models, as demonstrated by my current research work.

I am excited about the opportunity to work alongside Vector's AI developers and researchers, contributing to open-source software development and helping to solve industry challenges. My combination of technical skills, research experience, and practical application development makes me well-suited for this role.

Thank you for considering my application. I look forward to discussing how I can contribute to Vector Institute's innovative AI projects.

Best regards,

Shuolin (Leo) Yin