Lakshya Prakash Agarwal

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AI/ML Engineer with cross-functional expertise bridging business and technology to build scalable LLM/GenAI systems. Delivering domain-driven solutions that transform technical innovation into measurable business and societal impact.

EXPERIENCE

Software Engineer, Private Equity Innovation — May 2025 – Present
Bain & Company — *Toronto, ON*
- Prototyped and deployed an **enterprise-grade AI system** on **Azure**, integrating custom **LangGraph agents** with a legacy LLM sentiment tool to enable "chat-with-data" functionality, aiming to reduce expert time on data queries by an estimated 40%.
- Enhanced the **reliability** and **performance** of a critical internal catalog of services and data sources, automating key processes to save an estimated **total of 100 monthly hours**, and improve data accessibility for global consulting teams.
- Spearheaded multiple enhancements to the team's **core tooling and infrastructure**, accelerating development and iteration cycles by 25% to support the firm's key goal of delivering strong performance through faster delivery of AI-powered solutions.

Applied AI Engineer — Sept 2024 – Apr 2025
Memorang - Building the "AI stack" for education — *Toronto, CA*
- Architected and deployed an AI-powered language assessment system for the official TOEFL Practice app, leveraging **multi-modal LLM-based analysis** to provide real-time feedback on speaking/writing tasks, processing 4,000+ weekly submissions with 85% accuracy against human-graded responses
- Developed end-to-end knowledge management system using Vision Language Models (VLM) for **multi-vector retrieval**, enabling automated ingestion of content for fine-tuning, and reducing manual data entry by ∼30%
- Built an event-driven agent framework using **LangGraph** for dynamic orchestration of specialized agent types, enabling composition of complex workflows such as automated question generation to cut down costs by ∼40% for clients

Associate, Private Equity Group (Americas) — Sept 2020 – May 2023
Bain & Company — *Gurugram, IN*
- Led the development of **LLM**-based sentiment analysis system on **AWS EC2** using **Docker** and **Azure OpenAI**, processing financial documents for PE due diligence, and boosting operational efficiency by 50% in case team requests.
- Automated a retail analytics platform using **Python** and **Alteryx** on NielsenIQ PoS data, collaborating closely with data teams and leadership to save the practice ∼150 hours/month and elevated client Net Promoter Score (NPS) to 90%
- Analyzed 50+ surveys through 10+ consumer behavior metrics covering brand awareness, NPS, key purchase criteria across industries, helping PE clients with investment decisions and generating ∼2.8X average return

SKILLS

Languages: Python, SQL, TypeScript, R, LaTeX
AI/ML: Agents, MCP, PyTorch, HuggingFace, RAG, LangGraph / LangChain, Diffusion Models, Vector DBs
Data, Cloud & DevOps: Azure, AWS, GCP, Pandas, Scikit-learn, Docker, MLflow, PostgreSQL, GitHub Actions, Git
Full Stack: FastAPI, React, Node.js, Go
Certifications: Generative AI Associate Engineer (Databricks)

PROJECTS

WhatsApp-based Animal Accident Reporting Chatbot
- Volunteered with Costa Rican wildlife non-profit SalveMonos to develop an AI chatbot using GPT-4o, LangGraph, WhatsApp API, and Google Cloud, enabling local citizens to instantly report animal accidents to authorities in natural language and enhancing emergency response efficiency.

LaunchLens (LLM-based VC Idea Evaluator)
- Awarded "Best Overall Project" among 150+ teams at a hackathon hosted by Harvard & Microsoft for developing an AI-powered tool to evaluate startup ideas against custom investment theses & criteria.

Deep Learning & Optimization
- Developed an **autoencoder**-based conditional asset pricing model for a course project using **PyTorch** to extract latent factors from a cross-section of monthly stock returns and company characteristics, and then predict future expected returns.
- Engineered a Python-based solution for a Vehicle Routing Problem, optimizing public transit evacuation routes for the Montreal's public transit authority using Mixed Integer Linear Program (MILP) techniques and **Gurobi** solver

EDUCATION

McGill University, Desautels Faculty of Management — Montreal, CA
Master of Data Science & Analytics (MMA) | GPA : 3.86/4.00 — *Jul. 2023 – Aug 2024*
Relevant Coursework: AI/ML in Finance, Enterprise Machine Learning, Optimization for Data Science

Delhi University, Hansraj College — New Delhi, IN
Bachelor of Arts (Economics) | GPA : 8.92/10.00 — *Jul. 2017 – Aug 2020*
Relevant Coursework: Microeconomics, Econometrics, International Trade, Financial Instruments