

Lakshya Prakash Agarwal

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EXPERIENCE

Graduate Research Assistant

Sept 2023 – May 2024

McGill University, Desautels Faculty of Management

Montreal, CA

- Conducted structured sentiment analysis using OpenAI's GPT-4 on 250K+ social media posts regarding abortion viewpoints, yielding key insights for a pivotal UMass Boston research initiative on the role of online media in shaping public opinion
- Orchestrated a high-volume data analytics pipeline for 300K+ Instagram posts, from data scraping via APIs to advanced deep learning tasks such as LDA topic modelling and image detection to uncover feature adoption by topic segments

Data Architect / Team Lead

Sept 2023 – Apr 2024

CAE Inc.

Montreal, CA

- Spearheaded a high impact consulting project, leading a team of 6 students to success through comprehensive project planning, regular progress reviews, and proactive client communication for a successful project delivery ahead of schedule
- Developed and implemented ETL solutions for fragmented bill-of-materials data, leveraging graph theory, network analysis and clustering tools to propose strategies for turnkey/kitting of components, reducing purchase orders by ~20%

Data Engineer - Associate, Private Equity

Sept 2020 – May 2023

Bain & Company

Gurugram, IN

- Spearheaded the development of ClassifAI, an LLM-based GenAI solution deployed on AWS EC2/ECR for extensive large-scale sentiment classification, increasing operational efficiency by ~50% on pilot customer sentiment analysis cases
- Pioneered and automated a retail analytics platform using Python and Alteryx on NielsenIQ point-of-sale data, collaborating closely with 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
- Coached 100+ new hires in 5 practice-wide trainings on Excel and Tableau; Nominated "Star Innovator" among 800+ employees at annual awards; Organized a 50+ member community for code challenges

EDUCATION

McGill University, Desautels Faculty of Management

Montreal, CA

Master of Management in Analytics (MMA) | GPA : 3.87/4.00

Jul. 2023 – Aug 2024

Relevant Coursework: Enterprise Machine Learning, Text Analytics, 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

PROJECTS

Personal Projects | *Python, Data Science, Machine Learning, Neural Networks, Optimization*

- 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
- Developed a machine learning model using Gradient Boosting (XGBoost), to predict Airbnb listing prices across 5 cities with a mean error rate of 10%, which helps hosts in setting competitive prices for listings, and assists guests in finding value stays
- Constructed and optimized tree-based algorithms (Decision Trees, Random Forest) from scratch for both regression and classification tasks; validated performance against packaged implementations, recording an average score difference of 20%
- Built a custom transformer language model (GPT-2 equivalent) from scratch, learning about key concepts such as regular expressions, embeddings, attention mechanism, layer stacking and normalization, and the encoder-decoder architecture

Full-Stack AI Applications | *Python, React, FastAPI, Large Language Models, APIs*

- Created [PromoPix](#) to help create advertisement copies directly from product images, utilizing GPT-4 Vision API
- Developed JD Interpreter for job seekers to turn long descriptions into structured requirements and receive tailored suggestions on resumes using pre-trained AI models

Hackathons and Competitions

- Awarded "Best Overall Project" among 150+ teams at "AI EarthHack", hosted by Harvard & Microsoft, for creating a RAG-enabled GenAI tool with OpenAI Assistants for critical evaluation of business models for venture capitalists
- Achieved 1st place among 8+ teams in the Databricks Analytics Hackathon challenge, predicting score margins for the latest NBA season using machine learning tools such as AutoML, MLflow, and Unity Catalog on the Databricks platform

TECHNICAL SKILLS

Languages: Python, SQL, JavaScript, HTML/CSS, R

Libraries: Pandas, NumPy, matplotlib, Scikit-learn, NetworkX, MLFlow, PyTorch, PySpark, OpenAI, huggingface, LangChain

Frameworks and Tools: React, Node.js, Flask, Streamlit, FastAPI, Docker, Git, CI/CD, PowerBI, Tableau, Alteryx, Azure, AWS, Databricks, Airflow

Certifications: Generative AI Associate Engineer (Databricks); Azure AI Fundamentals (Microsoft); Data Scientist w/ Python (DataCamp)