Prateek Nigam

Data Scientist

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PROFESSIONAL SUMMARY

Data Scientist with 5+ years of experience applying AI, NLP, and multi-agent systems to real-world problems. Recently completed a Master's in Computer Science (AI) at the University of Galway. Proficient in Python, LLMs, RAG pipelines, and frameworks such as LangChain, LangGraph, and PyTorch. Experienced in building scalable AI solutions, including enterprise Market Mix Modeling, improving decision-making and operational efficiency.

SKILLS

- **Technical Skills:** Python, Transformers, LLMs, Fine-Tuning, Retrieval-Augmented Generation (RAG), Multi-Agent Systems (LangChain, LangGraph, CrewAI), Machine Learning (Regression, Decision Trees, LightGBM, Bayesian Regression), Deep Learning (PyTorch, Neural Networks, NLP, Representation Learning), Cloud Platforms (AWS), Data Analysis, Data Visualization (Matplotlib, Seaborn, Power BI, Tableau)

- **Strategic Skills:** Critical and Analytical Thinking, Collaborative Problem-Solving, Aligning AI Solutions with Business Objectives, Rapid Adaptation to New Domains and Technologies

EXPERIENCE

- **Fractal Analytics** — Mumbai, India
  Data Scientist — *Oct 2021 – Aug 2024*
  - **Market Mix Expertise**: Contributed as a **subject matter expert in MMM (Market Mix Modeling)** across CPG/FMCG product categories, analyzed marketing effectiveness, and **optimized advertisement investments**, leading to a **projected 5–10% increase in ROI**.
  - **Hierarchical Bayesian Modeling Optimization**: Optimized **Hierarchical Bayesian Modeling** runtime **from 5 hours to 8 minutes** by replacing Theano tensors with Jax arrays, enabling larger datasets and **increasing project capacity by 50%**.
  - **Zip Code-Level Targeting**: Researched and built **zip code-level LGBM models** with **70% performance**, providing granular insights and improving targeted marketing campaigns.
  - **EDA Automation & Productivity**: Automated EDA process, reducing analysis time by approximately **one-third of analysis time** and boosting overall team productivity.
  - **Copy Testing Analysis**: Conducted copy testing exercises on multiple datasets, focusing on **KPIs** such as **customer retention, ad relevance,** and **brand appeal**, and **identified effective source-cross feature combinations** for predicting **Volume per GRP**.
  - **KPI Attribution Models**: Built **regression models for KPI attribution** and **decision trees** using information gain, collaborating closely with the client team to achieve an **F1 score of 48%** through **manual tree creation and integration of business insights**.

- **Capgemini India Pvt Ltd.** — Bangalore, India
  Software Engineer — *Aug 2019 – Oct 2021*
  - **Cross-Functional Collaboration**: Collaborated with cross-functional teams to design **solutions** based on evolving client requirements.
  - **ETL, Data Processing & Security**: Enhanced the PySpark transformation ETL tool to improve **data processing efficiency** and performance, and implemented **Single Sign-On (SSO)** using **Kerberos** with LDAP integration for Active Directory group filtering.

EDUCATION

- **University Of Galway** — Galway, Ireland
  Master of Science in Computer Science with AI — *2024 – 2025*

- **Acropolis Institute of Technology and Research** — Indore, India
  Bachelor of Engineering in Electronics and Communication — *2015 – 2019*

PROJECTS

- **AutoMMM**: AI-powered Market Mix Modeling system using Python, LangChain, and multi-agent collaboration that autonomously analyzes ad spend, sales, and external factors using multi-agent collaboration with shared context.
- **Building the Beast - Transformers from Scratch**: Built transformer models from scratch to learn how they work. I broke down each part to understand how they fit together