DIVYAPRAKASH RATHINASABAPATHY – DATA SCIENTIST

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London, UK.

Data Scientist with a Master's in Data Science and over 2 years of experience in applying advanced analytics, machine learning, and natural language processing (NLP) to solve complex business problems. Proficient in delivering insights from machine learning models, deploying digital analytics solutions, and utilizing generative AI technologies for marketing analytics and customer engagement. Adept at collaborating with stakeholders to unpack business challenges and develop statistical frameworks that drive actionable insights. Proven expertise in Python, SQL, R, and deploying end-to-end AI solutions, with a strong focus on computer vision, statistical algorithms, and data-driven decision-making to optimize marketing ROI. GitHub

EDUCATION

Data Science, M.Sc., – Kingston University, U.K. **Jan 2023 – Jan 2024**

Electronics and Communication Engineering, B.Tech., – Amrita School of Engineering, India **Jul 2017 – May 2021**

SKILLS AND EXPERTISE

- Marketing Analytics & Statistical Algorithms: Expertise in building models to measure and optimize marketing ROI, leveraging statistical techniques such as regression, time-series analysis, and portfolio management. Knowledge of statistical algorithms used in marketing analytics.
- Machine Learning & NLP: Experienced in delivering insights from machine learning models, including applications of NLP and computer vision in marketing contexts. Skilled in generative AI technologies and their application to solve customer business problems.
- Generative AI Systems: Hands-on experience with Retrieval-Augmented Generation (RAG), LLM optimization, and deploying frameworks such as LangChain, LangGraph, and Autogen for advanced NLP solutions.
- Data Engineering & Integration: Proficient in building scalable data pipelines, integrating AI systems with enterprise platforms, and processing structured and unstructured data for machine learning models.
- Digital Analytics Solutions: Expertise in deploying digital measurement and analytics solutions, translating model results into tactical business insights, and integrating recommendations into business processes.
- Programming Languages & Tools: Advanced proficiency in Python, SQL, and R for statistical analysis, data preprocessing, and model development. Experienced with TensorFlow, PyTorch, scikit-learn, and Keras for machine learning tasks.
- Collaboration & Stakeholder Engagement: Skilled in engaging cross-functional teams, aligning AI solutions with client goals, and ensuring the seamless integration of machine learning models into business operations.

WORK EXPERIENCE

AI Engineer Intern – *Navi Promotions, Remote.* **Oct 2024 – Present**

- Developed Retrieval-Augmented Generation (RAG) based prototypes for chatbots, tailored to client specifications, incorporating advanced NLP models to enhance user interactions and meet business objectives.
- Engineered multi-agent flow architectures using frameworks such as Autogen and LangGraph, enabling the creation of dynamic, scalable AI systems that can handle complex, multi-step user interactions.
- Worked with backend frameworks like Flask to design and implement server-side architectures for AI solutions, ensuring smooth integration with client systems and services.
- Built and optimized robust Generative AI systems, focusing on improving the reliability and responsiveness of large language model (LLM) outputs, ensuring accurate and contextually appropriate results.
- Implemented advanced parsing techniques using libraries like Pydantic and Instructor, improving the extraction and validation of structured data from natural language inputs, enhancing the chatbot's performance and reliability.
- Documented development processes, model specifications, and system architectures to ensure clarity and facilitate future enhancements and knowledge transfer.
- Worked independently on the entire project, organizing and managing all aspects of the workflow, from requirements gathering to model deployment. This autonomy enhanced my ability to prioritize tasks, meet deadlines, and deliver high-quality solutions with minimal supervision.

Junior Machine Learning Engineer Volunteer – *Omdena, Remote.* **Apr 2024 – Jun 2024**

- Collaborated with senior data scientists and clients to identify and define project objectives, gathering requirements and collecting relevant data to effectively address specific business challenges.
- Conducted thorough data validation using standardized protocols to ensure accuracy and integrity, laying a solid foundation for subsequent analysis.
- Performed exploratory data analysis (EDA), including data cleaning, visualization, and documentation, to uncover insights and support informed decision-making.
- Actively participated in workshops and training sessions, providing guidance and support to colleagues who required assistance in unfamiliar tasks, fostering a collaborative and inclusive team environment.
- Developed comprehensive reports and visualizations to clearly communicate findings to stakeholders, facilitating a better understanding of data-driven insights.
- Engaged in continuous learning and skill development, staying updated with industry best practices to enhance analytical capabilities and contribute effectively to team projects.

Programmer Analyst trainee: Data Science – *Cognizant Technology Solutions, India.* **Aug 2021 – Nov 2022**

- Developed and optimized NLP models for extracting actionable insights from large datasets, utilizing state-of-the-art text processing techniques and parameter-efficient fine-tuning methods such as LoRA, Prompt Tuning, and P-tuning to enhance business decision-making processes.
- Implemented Retrieval-Augmented Generation (RAG) systems, combining document retrieval and generative models to improve the accuracy and relevance of automated responses for customer-facing applications.
- Utilized advanced NLP frameworks, including Hugging Face (for model deployment and fine-tuning) and TensorFlow, to build, fine-tune, and deploy language models for tasks including text summarization, sentiment analysis, and question-answering.
- Designed and built data pipelines for the efficient processing and transformation of textual data, ensuring that NLP models received high-quality, clean data for optimal performance.
- Integrated NLP solutions with external systems using RESTful APIs, enabling seamless interaction between the AI models and enterprise platforms, thus enhancing user experience and operational efficiency.
- Collaborated with cross-functional teams to gather requirements, define business goals, and deliver NLP solutions aligned with customer needs and business objectives.

PROJECT EXPERIENCE

AI powered CV optimization tool using Langgraph **Link**

- Built an AI-driven CV optimization tool using Python, LangChain, Cohere LLM API, and Streamlit to enhance CV relevance based on job descriptions.
- Designed a StateGraph framework for iterative CV evaluation, scoring, and refinement, with automated suggestions and keyword alignment.
- Developed a user-friendly interface enabling real-time CV updates, leveraging Regex for precise data extraction and actionable insights.

Doctor's appointment managing Chatbot **Link**

- Designed and built an interactive chatbot system for managing doctor appointments, using Google's Gemini Large Language Model for NLP tasks such as intent and entity recognition.
- Implemented MySQL for database management and used Streamlit for the front-end interface. The chatbot automated tasks like appointment booking, editing, and cancellations, improving operational efficiency and user experience.

Supply Chain Analysis Dashboard **Dashboard Link**

- Developed an end-to-end Power BI dashboard for supply chain analysis, helping stakeholders track performance and customer satisfaction.
- Used Power Query for data cleaning and DAX for advanced calculations, enabling the visualization of key metrics such as OT %, IF %, and OTIF %. Provided a comprehensive analysis that allowed stakeholders to make informed decisions, driving improvements in operational performance.

Ship Performance analysis: **Link**

- Applied statistical techniques such as ANOVA and Tukey HSD to assess ship performance over time, identifying significant differences in performance metrics.
- Developed a dynamic Power BI dashboard to visualize time-series data, highlighting critical trends for strategic decision-making.
- Used ARIMAX forecasting to predict fuel consumption, achieving a Mean Absolute Percentage Error (MAPE) of 7.42%, providing reliable insights for optimizing fuel efficiency and reducing operational costs.