Amanda Dsouza

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Profile Summary

Data Scientist, with 8+ years of experience in NLP/ML, and an MS CS (ML) from Georgia Tech.

As a Staff Data Scientist at Jasper.ai, I built and fine tuned large language models on Jasper data, worked closely with Product to integrate AI and led the evaluation of most of Jasper's LLM partnerships. I led the Text team at Fractal.ai, working on natural language processing and text mining, for industry, and applied research. I was hands-on, on the projects I led.

On the research front, I have been involved in researching ways to evaluate LLMs effectively on real-world (marketing content) use cases, Generalization in RL, and Question Generation. I am also motivated in finding interesting ideas from ML adjacent fields. I write on these topics at https://amy12xx.github.io/.

In my previous positions, I have managed a number of IT (C#, Java) projects on site for Fortune 500 companies in the US and Europe. I have contributed to open source (scikit-learn, stable-baselines-3, dirty-cat) and have mentored at scikit-learn sprints.

Technologies & Education

Python, Pytorch, Hugging Face, Scikit-Learn, Numpy, Pandas, OpenAI Gym, IsaacGymEnvs, Stable Baselines3, Weights & Biases, Tensorboard. Training models on Cloud (AWS/Google Vertex/GCP/Azure).

Master of Science in Computer Science (ML) - Georgia Institute of Technology, Atlanta, GA
Bachelor of Engineering (Computer) - PCCE, Goa, India

Experience

Staff Data Scientist
Jasper.ai (Jan 2023 - July 2023)

I built and fine tuned large language models for various Jasper use cases, using efficient training methods, and supported production workflows.

I worked closely with Product teams by building solution designs to integrate AI. I led the AI solution development for Jasper Brand Voice, to create personalized content, by designing retrieval pipelines (with vector databases) for injecting knowledge, and chaining LLM requests

for enabling tone and detailed style guides (for mid-sized clients) with high recall. This saw a 3-4x increase in customer retention over generic content.

I designed solutions for Jasper Chat and Templates, trading off token size (chat history, background information) with accuracy, and used different prompt engineering frameworks (ReACT, CoT).

I led the evaluation of most of Jasper's LLM partnerships (and their models). I standardized Jasper's partner models evaluation process, and created an LM-evaluation-harness (on top of Eleuther's LM harness) to evaluate LLMs on marketing content use-cases, along with custom metrics (such as semantic quality, factuality) to support it.

Independent Researcher, Graduate studies
Georgia Institute of Technology (Jan 2021 - Dec 2022)

- Evaluated prompt-based methods for generation of deep cognitive questions, and testing out a similarity based technique for auto-generating deep questions.
- Developed an Imitation Learning project, extending Generative Adversarial Imitation Learning, with Vector Quantization, on IssacGym, and other RL environments.
- Created a survey of generalization experiment design in RL, and related fields.

Lead Data Scientist
Fractal.ai (July 2016 - Dec 2020)

I lead teams in Text Mining / NLP and ML projects for large companies in Retail, Financial Services, FMCG. I also supported new and existing client proposals, and presented Fractal's text capabilities to C-level executives of various clients. I was responsible for the research and development of Fractal's Text Analytics IP solution, and led applied research sessions in the NLP practice.

Key project / client engagements

- Designed and implemented a classification system for automating the tagging of customer's call intent in a customer service center, for a large retail client. Using historical voice (audio recordings) data and text (emails, chat), built ML models to predict tags in Dutch language.

- Developed a news events trigger engine for a large financial institution to enable its relationship managers (RM's) to better understand their customers. The engine

summarized news articles relevant for an event category, and related to specific companies the RM's are interested in.

- Designed and implemented an end-to-end Information Retrieval system for a health & wellness company, for providing the backbone for search, question-answering systems. The engine recommended products based on user queries, including long form questions, and provided supporting wellness/health information for the question. Key components included harmonizing data from different sources, preprocessing query and documents for maximizing retrieval, fast K-documents retrieval using LSH, and ranking.

- Built a multi-lingual aspect-based sentiment analysis solution for customer reviews of a consumer products company. Built a trend trigger system on corporate financial (time-series) data, and devised methods to automatically detect seasonality in data.

- Presented Fractal's capabilities on real time text analytics at Microsoft's vendor conference in Redmond WA, and on text mining case studies at Data Hack Summit 2017, Bangalore. Conducted a workshop for a large retail client on Artificial Intelligence.

Technology Lead
Infosys Technologies (May 2005 - Jun 2016)

Data scientist for Infosys's Machine Learning Center of Excellence, responsible for implementing data mining and statistical machine learning solutions to various business problems. My previous roles were Technology Lead and Software Developer.

Worked on various supervised learning problems such as classification models for detecting driver patterns based on only GPS route data, for usage in insurance models, predictive analytics of client's site planning data for master data automation (with over 95% accuracy for most output parameters), and sentiment analysis for Infosys's Voice of Customer product

Provided architecture solutions for several key projects and RFPs. I have managed several IT projects over the years, in Agile, Waterfall and Iterative methodologies. I was the on-site coordinator for Boeing, with a 15-member offshore development team. I was the business analyst and scrum master for a 10-member development team for Toyota Motor Europe.