Subrata Mondal

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CAREER SUMMARY

Over 4 months of experience in Machine Learning, Data Preparation, Model Training, Evaluation, Optimization, Serving, Data Scaling and working with latest techs such as Large Language Models, LLMs.

SKILLS

Technical Skills:

- Python, SQL, Design Patterns, Testing, Object Oriented Programming, Version Control, Package & Dependency Management

Machine Learning / Deep Learning:

- PyTorch, ScikitLearn, Tensorflow, Numpy, Pandas, Data Processing, Visualizations, Model Training, Evaluations, Optimizations

Web Development:

- HTML, CSS, Javascript, Django, Django Rest Framework

WORK EXPERIENCE

Machine Learning Engineer - [RadicalX AI](#) - (Dec 2023 - Current)

- Analyzed and visualized various datasets using Python libraries such as scikit-learn, numpy and pandas to gain insights and identify patterns, trends and correlations.
- Developed and trained machine learning models using classification models such as linear, **trees** and **ensemble** classifiers like logistic regression, decision trees and random forest classifiers to solve classification problems.
- Optimized the model performance using techniques like cross-validation, regularization and hyperparameter tuning which helped me to secure a position in the top 5 finalists.

Machine Learning Engineer - Omdena - (Nov 2023 - Jan 2023)

- Developed a chatbot web app with agile design for rapid prototyping and experimentation for the research team.
- Researched diverse parameter efficient fine-tuning techniques such as LoRA, **QLoRA** to optimize the **LLM Chat** models with low training cost, smaller model size and faster inference.
- Achieved 75% model size reduction from 28 gb to 4 gb using QLoRA 4-bit **Quantization**.

PROJECTS

[Talk with doc](#) - (Dec 2023)

- Developed and deployed an interactive AI-powered chatbot application, 'Talk With Doc', leveraging the **Mistral 7B LLM** Model with **GPT4All** for advanced natural language understanding and response generation.
- Engineered a robust web application using Streamlit, integrating features such as PDF text extraction (pypdf2), real-time file monitoring (**watchdog**), and efficient language chain indexing (faiss-cpu) for an enhanced user experience.
- Orchestrated the end-to-end machine learning pipeline, from data preprocessing to model deployment, ensuring seamless integration with Google **GenerativeAI** and OpenAI services for dynamic content creation and language processing.

[EmotionAI](#) - (Nov 2023)

- Developed an advanced emotion classification web application using Streamlit, leveraging a fine-tuned DistilBERT model from Hugging Face Transformers to analyze and predict sentiment from user-input text with high accuracy.
- Engineered a robust machine learning pipeline using Python, orchestrating pre-processing, model inference, and visualizing results with dynamic bar charts, enhancing user interpretability of emotion analysis.
- Automated update processes with GitHub Actions workflows, streamlining the synchronization of documentation and ensuring codebase integrity through systematic CI/CD practices.

EDUCATION - (2019 - 2023)

- **Bachelor's of Technology in Computer Science Engineering (BTech CSE) -** Parul Institute of Technology, Vadodara, Gujarat