Laura Anderson

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Summary

Experienced Machine Learning Engineer with over 9 years of expertise in Machine Learning, Large Language Models, Machine Learning Engineering, MLOps, and extensive experience in architecting and deploying ML models on the Google Cloud. Proficient in working with cross-functional teams and possessing a strong interest in applying AI algorithms to tackle real-world challenges.

Skills

- **Machine Learning:** Supervised and unsupervised learning, ensemble methods, Transformer Models, LLMs, Image classification, Object detection, image segmentation, Fine-tuning.

- **Machine Learning Engineering:** Model Training, Model Deployment, API design, CI/CD, model versioning.

- **MLOps:** ML pipelines (KubeFlow), Containerization, and orchestration (Docker, Kubernetes), Model Monitoring.

- **Google Cloud:** Vertex AI, BigQuery, Cloud Storage, Cloud Pub/Sub, and Dataflow.

- **Programming Languages:** Python (NumPy, pandas, scikit-learn, TensorFlow, PyTorch), JavaScript.

- **Data Analysis and Visualization:** SQL, Pandas, Matplotlib, Seaborn, QlickSense.

- **Big Data Technologies:** Hadoop, Spark.

- **Tools:** Jupyter, Git, Docker.

Education

MSc in Machine Learning, University of Nottingham, United Kingdom	2022 - 2023
B.Tech in Computer Science and Engineering, JNTU, India	2008 - 2012

Professional Experience

NLP Research Assistant, University of Nottingham, United Kingdom Feb 2023 - Present

- Collaborated on a research project applying Large Language Models (LLMs) and Explainability to predict customer default probabilities in finance.

- Implemented LLMs based on Transformers and Explainability techniques for model transparency.

- Built ML pipelines using TensorFlow Extended (TFX) and Google Vertex AI pipelines for training LLMs.

Senior Machine Learning Engineer, Micron Technology, India Dec 2021 – Sep 2022

- Led machine learning projects end-to-end for defect detection and process optimization in semiconductor manufacturing.

- Implemented semantic search using Sentence Transformer models, sentence embeddings, vector databases, developed ensemble machine learning models, and integrated explainability methods.

- Designed object detection models using YOLO for packaging process monitoring.

- Developed batch and streaming, training, and inferencing pipelines on Google Cloud using, Vetex AI, Data Flow, pub/sub, BigQuery, Docker, KubeFlow, and Cloud composer.

Senior Machine Learning Engineer, HSBC Technology, India   Aug 2015 – Dec 2021

- Applied ML and NLP to financial datasets, led development teams and engaged with stakeholders.

- Developed forecast models for different markets using Linear and ensemble methods.

- Developed aspect-based sentiment classifier using BERT, and sentence similarity models using LSTM to improve the user experience with HSBC digital apps

- Developed web applications using HTML, CSS, JQuery, and REST API to integrate ML applications and Deploy them on GCP environment.

- Worked with Vertex AI notebooks, Built training pipelines with Vertext AI Pipelines, deployed models to Vertext AI endpoints.

- Trained large-scale models on GCP using Vertex AI, and Docker.

- Developed ETL scripts using PySpark on BigData and with SQL on PostgreSQL, and Teradata.

- Used other cloud services such as BigQuery, Cloud Storage to store and integst data to ML models.

- Built various dashboards using matplotlib, seaborn, Qlickense.

Software Engineer, Data Analytics, Ebix, India   Jun 2013 – Aug 2015

- Worked as a data warehouse and BI developer for Tata Teleservices Ltd.

- Developed views, materialized views, and dashboards using SQL.

Projects

Transformer and Explainable AI   **Git Repo:** link

- I developed a Transformer encoder from scratch using Advanced TensorFlow to implement the explainability algorithm Integrated Gradients. This implementation allowed me to demonstrate explainability and attention maps for a sentiment classification task.

ML from scratch   **Git Repo:** link

- I designed and implemented Neural Networks, Linear Regression, K-means clustering, and K-nearest neighbors (KNN) algorithms from scratch in vectorized form. This project showcases my robust coding skills and demonstrates my proficiency in linear algebra and a deep understanding of fundamental machine learning algorithms.