

SUMIT KUMAR

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<https://www.hackerrank.com/sumitflames>

An experienced Machine Learning Engineer with 3+ years of experience in developing Machine Learning/MLOPs pipelines, training models and implementing REST APIs for the same. Strong understanding of Machine Learning algorithms, NLP, libraries and frameworks such as TensorFlow, Scikit-Learn. Proven ability to preprocess and clean data, select appropriate features, and evaluate model performance. Hands-on experience with deep learning techniques including large language models.

Work Experience

Jio Platforms Limited, Remote

Machine Learning Engineer 11/2021- Current

Description: Developing interactive video chat bots (Engage Video Assistant) for Jio Platforms to support multiple Indic languages. (*Ongoing Project*)

Roles/Responsibilities:

- Created a Spell check logic for Entity Engine using Elastic Search to increase the accuracy to 90 percent.
- Implemented Entity System including Prebuilt Entities using Regex and Language Models.
- Developed Similarity algorithm to find the overlapping intents based on the expressions.
- Designed rest API using Flask for ML tasks (ETL, training, inference) and deployed it to the cloud.
- Optimized solutions with container-based approach using Docker.
- Experience in Azure devops and version control with Git.

Machine Learning Engineer

Description: Created Context based Question Answering System using LLM

Roles/Responsibilities:

- Created a QA system that answers from multiple extension documents (.docx, .pdf, .txt)
- Used large language models (GPT, WizardLM, Llama2) and frameworks such as llama-index, langchain and multiple sentence embeddings for context retrieval.
- Utilized multiple techniques to create dataset and data chunks to be utilized in context retrieval to be consumed by LLMs.
- Applied guardrails to control the generated text by LLM.

Machine Learning Engineer

Description: Worked on End-to-End Sentence recommendation system using Language models.

Roles/Responsibilities:

- Created a data augmentation system for multiple languages using language models and combination of ranking algorithms.
- Developed an automated MLOPs pipeline for loading the data, preprocessing, generating similar sentences using Kubeflow and deployed to cloud using Kubernetes.
- Utilised GCP Vertex AI services to automate ML pipeline and deployment.

Tata Consultancy Services, Remote

Data Scientist 07/2019- 11/2021

- Conducted exploratory data analysis (EDA) on in-vehicle audio data and vehicle internal signal data of faulty parts, identifying patterns and trends for further analysis.
- Used python pandas for feature extraction, enabling effective preprocessing of data.
- Developed machine learning and deep learning models such as KNN, CNN, LSTM, transformers, and clustering using Scikit-learn, Keras, and TensorFlow, to identify unknown sources of vehicle faults.
- Analysed and extracted valuable insights from data stored in BigQuery
- Developed Dataflow jobs using Apache Beam for seamless transmission of automotive data across various GCP services, contributing to improved data processing efficiency.
- Automated Dataflow pipelines using Apache Airflow, streamlining the data processing workflow.

Skills/Tools

Programming Language and Frameworks	Python, pandas, pytorch, langchain, llama-index
ML algorithms	KNN, Random Forest, LSTM, Transformers
Database/ Data Warehouse	MongoDB, BigQuery
Cloud Services	GCP, Kubenetes, Vertex AI
Project Methodology	Agile Scrum
OS	Mac, Ubuntu, Windows

Education

Bachelor of Engineering in Electronics and Telecommunication Engineering, 2015-2019, SKNCOE, Pune, India.

Research

Author/Elsevier 01/2023

Author to a chapter in the book – A technique of Data Collection for the book Statistical Modelling in Machine Learning, Edition 1 Academic Press,2023, Pages 23-36, ISBN 9780323917766,

<https://doi.org/10.1016/B978-0-323-91776-6.00011-7>.

(<https://www.sciencedirect.com/science/article/pii/B9780323917766000117>)

Achievements

Jio Product Matrix Award 2022 - Won Spot award for extraordinary performance and valuable contribution to EVA team.

TCS Achiever Award 06/2021 Star of the Month- Digital AI Learner Award for highest learning points in TCS India