MADHUSUDAN KUMAR

Senior Data Scientist

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PROFESSIONAL EXPERIENCE

ML Engineer | Prompt Engineer

Meta Tech Consultant | Unifytech

📅 Nov 2023 - Ongoing 📍 Mumbai

- Researched and implemented prompt engineering technique on RAG system to improve models question answer ability.
- Design and implement large scale data generation pipeline along with automated validation to improve smart glasses performance by finetuning LLMs

NLP RAG GenAI VectorDB LLM Prompt Tuning

Senior Data Scientist

SecureThings.ai

📅 Sep 2022 - Sep 2023 📍 Pune, India

- Implemented spacy pipeline to extract cybersecurity 50+ labels and 20+ relationships from 2 million plus semi-structured texts to generate knowledge graph with 70+ accuracy and further improve the performance using LLM pipeline with langchain.
- Collaborated with stakeholders to design and create product pipeline on AWS cloud using IaC, reducing the cloud management time by 70%, cloud cost by 50% and product deployment time by 80%.
- Responsible for end-to-end development and execution of backend application, supporting a product featuring 15+ screens and over 50 API integrations.

NLP NER FastAPI PyTorch Docker IaC LLM

Senior Data Scientist

Tata Consultancy Services
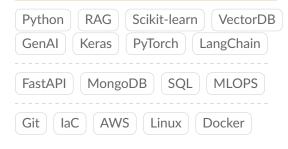
📅 Apr 2019 - Sep 2022 📍 Mumbai, India

- Led the team of 5 developers for web based ML exploration tool for 40% faster development and deployment of ML usecases in telecom domain.
- Designed ML solution for 10+ usecase for telecom fault and performance management leading to decrease in 15% reduction in events and enable close loop automation for 25% event.

Data Scientist

- Proposed, designed & built Python package for integration of 24+ ML use cases across 4+ applications, reducing integration time by 60%.
- Enabled one day ahead predictive maintenance, reduced ticket generation by 6% and optimised network performance using forecasting, clustering and anomaly dectection techniques, reducing the operation cost by 18% (POC).

Mlextend Xgboost Pyod AZURE VM Pytest Mlflow
Statsmodels Scikit-learn SARIMAX ETS Plotly NLP

SKILLS

Python RAG Scikit-learn VectorDB
GenAI Keras PyTorch LangChain

FastAPI MongoDB SQL MLOPS

Git IaC AWS Linux Docker

EDUCATION

M.Tech in Mechanical Engineering

IIT-B

📅 Jul 2017 - Nov 2018

- Sucessfully designed process to predict failure time of machines on the network to minimize the operation down time.
- Proposed and implemented standard template using owl ontology to digitally store properties of machine component from different vendors.
- Sucessfully modeled estimation of reliability of mechanical components from loading condition to estimate the time of failure enabling predictive maintenance

B.Tech in Mechanical Engineering

IIT-B

📅 Jul 2013 - Jun 2017

- Attended courses related to statistics, data analysis and mechanical engineering.
- Sucessfully headed official video channel, leading a team of 6 conveners, creating 60+ videos and covering 35+ events, with nearly 2 million views.

Internship in Non Linear Dynamics

Chiba University

📅 May 2016 - Jun 2016

- Researched on pattern formation and created meaningful visualization.

EXTRACURRICULAR

- Core team member of "Mechanical Freshie", a video with more than 630,000 views.
- Supported students with physics classes for IIT-JEE exam.