MANUJ UPADHYAY

AI/ML ENGINEER

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PROFILE SUMMARY

AI/ML Developer with hands-on experience in end-to-end ML pipelines, fine-tuning Large Language Models (LLMs), and deploying production-grade models. Skilled in NLP, Computer Vision, and ML Ops with strong exposure to modern techniques like LoRA, QLoRA, RAG, and Agentic AI. Passionate about building scalable, intelligent systems that drive real-world impact.

PROFESSIONAL EXPERIENCE

Jr. AI/ML Developer [July 2024 - Present]

HubBroker ApS Pvt. Ltd.

Project: IDP (Intelligent Document Processing)

- Fine-tuned LayoutLM and other transformer-based models to extract key information from diverse document types.
- Implemented LoRA and QLoRA techniques for efficient fine-tuning of LLaMA models, reducing compute while maintaining performance.
- Designed and deployed a robust end-to-end ML Ops pipeline for automated model training, evaluation, and deployment.
- Preprocessed and converted image and XML data to meet specific input requirements for NLP and CV models.
- Conducted advanced experimentation with GPT and BERT-based models to optimize accuracy and system performance.

Data Scientist Intern [Feb 2024 - Apr 2024]

Valens Datalabs Pvt. Ltd.

- Engineered data pipelines using PySpark for processing large-scale batch and streaming data.
- Utilized AWS services (EC2, S3) to manage cloud-based workflows, enhancing data storage and computation efficiency.
- Built predictive models and performed analytics using Power BI, driving insights from streaming and big data systems.
- Analyzed customer and salesperson conversation data, implementing ML and DL models to extract insights and improve communication strategies.

EDUCATION BACKGROUND

Bachelor of Computer Science Engineering [CGPA: 8.5] [June 2020 - July 2024]

Gujarat Technological University

CORE TECHNICAL SKILLS

- **Machine Learning & Deep Learning:** End-to-end ML and DL, Time-Series Analysis, Large Language Models (LLMs), GANs, RAG, VLM, Agentic AI
- **Natural Language Processing:** Text Classification, Named Entity Recognition, Document Processing, Sentiment Analysis, Document Classification
- **Computer Vision:** Object Detection, Image Segmentation, Gesture Recognition
- **Big Data:** Data Engineering, Real-Time Streaming, Batch Processing
- **ML Ops:** Model Deployment, CI/CD Pipelines, Experiment Tracking
- **Programming:** Python, C++, SQL

TOOLS & LIBRARIES

- **Frameworks & Libraries:** TensorFlow, PyTorch, Scikit-learn, Hugging Face Transformers, LangChain, Ollama, FastAPI, FLASK
- **Big Data Tools:** PySpark, Hadoop
- **ML Ops Platforms:** Git, GitLab, Docker, DVC, MLflow, Weights & Biases
- **Visualization:** Power BI, Matplotlib, Seaborn
- **Cloud Services:** AWS

PROJECTS

Machine Learning [Scikit-Learn, NumPy, Pandas, Seaborn, XGBoost]

- **Airline Passenger Satisfaction:**
  - Developed a ml model to predict airline passenger satisfaction from a dataset of 100,000+ records, achieving 96% accuracy and identifying key factors influencing customer satisfaction.
- **Recommendation Systems (Movie, Book, Song):**
  - Designed and implemented personalized recommendation engines for movies, books, and songs using collaborative filtering and content-based algorithms.
- **Heart Disease Prediction:**
  - Created a predictive model to estimate the likelihood of heart disease based on patient data, improving early detection.

Deep Learning [TensorFlow, Keras, PyTorch, OpenCV, MediaPipe, Spacy]

- **Credit Card User Churn Rate Prediction:**
  - Developed a predictive deep learning model to identify credit card users likely to churn by analyzing customer behavior and transaction data.
- **Emotion Detection:**
  - Developed a deep learning model using Convolutional Neural Networks to identify emotions from facial images. Implemented this project to analyze real-time emotional responses, achieving high accuracy in detecting key emotions like happiness, sadness, and anger.
- **Social Media Usage and Emotional Well-Being:**
  - Conducted sentiment analysis to explore the impact of social media usage on emotional well-being, applying NLP techniques.
- **Supreme Court Judgement Finder:**
  - Designed an NLP system to efficiently search and retrieve relevant Supreme Court judgments from a large legal dataset.

Kaggle Competitions [NLTK, Keras, PyTorch, Statsmodels, xgboost, NumPy, matplotlib]

- **Natural Language Processing with Disaster Tweets**
  - Developed an NLP model to classify tweets as disaster-related or not, using techniques such as text preprocessing, TF-IDF, and deep learning algorithms.
- **Bike Sharing Demand Prediction**
  - Built a predictive model to forecast bike-sharing demand based on temporal and weather data. Implemented EDA, time-series analysis and deep learning models.
- **Walmart Recruiting - Store Sales Forecasting**
  - Developed a time-series model to predict store sales for Walmart, incorporating seasonal data.

SOFT SKILL

- Clear communication with technical and non-technical audiences
- Complex problem-solving and innovative solutions
- Adaptability to industry trends and changing environments