AjayKumar

AI/ML Engineer

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Professional Summary

- AI/ML Engineer with **3+** years of experience building scalable machine learning and generative AI solutions in NLP, computer vision, and time series forecasting, delivering production-grade models that support real-time inference and measurable business outcomes.
- Strong Command in developing modular ML pipelines using Python, Scikit-learn, ML flow, and Airflow responsible for end-to-end workflow automation, feature engineering, and CI/CD-based model delivery across cross-functional teams.
- Proficient in training and deploying deep learning models using PyTorch and TensorFlow for applications like OCR, document classification, and multivariate demand forecasting.
- Expert in building and fine-tuning large language models (LLMs) using BERT, GPT-4, and LLaMA2, and implementing RAG-based systems with LangChain, Pinecone, and Hugging Face to solve problems in document retrieval.

Skills

Language/ IDE's: Python, MATLAB, Jupyter Notebook, Google Colab, VS Code, SSMS
Machine Learning: Linear, Logistic Regression, Decision Trees, Random Forests, NumPy, SVM, A/B Testing, Naive Bayes
Database and Tools: SQL Server, MySQL, PostgreSQL, Redis
Deep Learning: CNN, RNN, LSTM, NLP, Large Language Model (LLM), LangChain, Hugging Face Transformers (BERT, GPT-3)
Cloud/Visualizations: AWS (EC2, SQS, SNS, Code Deploy, CloudWatch, API Gateway), GCP (Vertex AI, Google Cloud Storage), Tableau, Power BI
Statistical Techniques: Hypothesis Testing, Data Visualization, Data Modelling, A/B testing, Model Evaluation
Packages and Frameworks: NumPy, Pandas, Matplotlib, Scikit-learn, Seaborn, TensorFlow, Keras, NLTK, XGBoost, PyTorch

Work Experience

CVS Health Group, OH. **August 2024 – Current**

Machine Learning Engineer

- Developed an anomaly detection pipeline using Isolation Forest and historical claims data to identify suspicious insurance activities, reducing fraud analyst investigation time by 45% and improving detection precision across property.
- Engineered and deployed a credit risk prediction model using XGBoost and underwriting data to evaluate applicant creditworthiness, enhancing risk assessment accuracy by 32% and minimizing default rates in niche insurance markets.
- Built custom NLP pipelines using spaCy and regex to extract policy terms, insurer names, and regulatory clauses from scanned documents and emails, accelerating claim review and documentation parsing by 39%.
- Integrated Hugging Face transformer models with Python and Airflow to auto-generate financial compliance summaries from unstructured data, reducing analyst workload by 65% and ensuring consistent alignment with SEC and FINRA regulatory mandates.
- Designed A/B testing frameworks for evaluating multiple predictive models (Random Forest, Gradient Boosting) in policy lapse prediction, uncovering a higher-performing strategy that improved forecast accuracy by 21% on lapse-prone customer segments.
- Streamlined feature engineering across diverse actuarial datasets using Scikit-learn and NumPy, reducing preprocessing time by 70% and improving model stability for investment analysis and rate-making strategies.

Accenture, India. **August 2020 – December 2022**

Data Scientist

- Created a disease risk prediction model using XGBoost on structured EHR datasets, which improved early diagnosis accuracy by 28% and enabled doctors to detect chronic conditions much earlier during routine health screenings.
- Fine-tuned a domain-specific BERT model on 80K+ patient reviews, increasing sentiment classification accuracy by 24% and enabling hospital teams to rapidly prioritize high-impact service improvements and resolve grievances.
- Executed claims validation pipeline using OCR and TensorFlow CNNs, reducing manual insurance processing time by 47% and enhancing compliance workflows across three regional healthcare units managing thousands of cases monthly.
- Deployed GPT-3 powered summarization engine for physician-patient conversations, which reduced clinical note-taking time by 38% and helped doctors allocate more time for direct patient interaction and follow-up care.
- Configured containerized retraining pipelines on AWS EC2 with ML flow, achieving 99.8% uptime and ensuring production-grade ML lifecycle management with consistent logging, versioning, and rollback capabilities.
- Crafted interactive Tableau dashboards visualizing model outputs like symptom clusters and risk scores, enhancing weekly review meetings with actionable insights for both clinical leads and operational stakeholders.
- Performed hypothesis testing on treatment efficacy datasets using statistical methods (t-tests, chi-square) to validate intervention outcomes, resulting in a 17% improvement in confidence scores.

Education

Master of Science in Data Science | University of Memphis, TN, USA.
Bachelors in Computer Science Engineering | Lovely Professional University, India.