Vaishnavi Venkat Vatti

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Professional Summary

- **AI/ML Expertise:** 5+ years of experience applying **Machine Learning, Deep Learning, NLP, LLMs, Generative AI, XGBoost, Random Forest, CNNs, Transformers, and RAG pipelines** to solve business problems in finance, retail, and non-profit sectors.
- **Evaluation & Model Performance:** Experienced in applying **Accuracy, R^2, RMSE, F1-score** for ML models, and **BLEU, ROUGE, perplexity** for Generative AI models.
- **Data Engineering:** Strong expertise in **ETL/ELT, Data Lakes, Data Warehousing, Big Data (Spark, Databricks), Snowflake, Redshift, BigQuery**, and distributed pipelines for large-scale processing.
- **Cloud Computing:** Skilled in **AWS (SageMaker, Bedrock, Redshift, Glue, Lambda, Step Functions, S3), Azure ML, GCP Vertex AI**, and designing cost-optimized AI pipelines.
- **MLOps & Automation:** Proficient in **Docker, Kubernetes, MLflow, Jenkins, GitHub Actions, Airflow, Terraform** for CI/CD automation, model deployment, monitoring, and governance.
- **Programming & Development:** Strong coding skills in **Python, SQL, R, Java, Bash/Shell** with frameworks like **PyTorch, TensorFlow, Hugging Face, LangChain**.
- **Analytics & Visualization:** Expertise in **Tableau, Power BI, Looker, Matplotlib, Seaborn, Plotly**, delivering insights for KPI tracking, business intelligence, and executive reporting.
- **Specialized AI Areas:** Experience in **Recommendation Systems, Forecasting Models, Chatbots, Predictive Maintenance, Topic Modeling, NER, Document AI, RAG + Vector Databases (Pinecone, FAISS, Weaviate)**.
- **Leadership & Collaboration:** Led **Agile sprints, stakeholder demos, and end-user training**, ensuring successful adoption of AI-driven solutions.
- **Soft Skills:** Strong problem-solving, presentation, and cross-functional collaboration, with proven ability to translate business requirements into **scalable, production-ready AI/ML systems**.

Core Skills

- **Programming & Tools:** Python, SQL, R, Java, Bash/Shell, Git, Docker, Kubernetes, Jenkins, GitHub Actions, Airflow, Terraform
- **AI/ML Expertise:** LLMs (GPT, Claude, Llama), Generative AI, Hugging Face, PyTorch, TensorFlow, Scikit-learn, XGBoost, Random Forest, CNNs, RNNs, Transformers, Deep Learning, NLP, Topic Modeling, NER, Recommendation Systems, Forecasting, RAG, Vector Databases (Pinecone, FAISS, Weaviate), LangChain, MLflow
- **Evaluation Metrics:** Accuracy, R^2, RMSE, F1-score, Precision/Recall, BLEU, ROUGE, Perplexity
- **Data Engineering:** ETL/ELT, Apache Spark, Databricks, Data Lakes, Warehousing (Snowflake, BigQuery, Redshift), SQL/NoSQL databases (PostgreSQL, MongoDB, DynamoDB)
- **Cloud Platforms:** AWS (SageMaker, Lambda, Bedrock, Redshift, Glue, Step Functions, S3), Azure ML, GCP (Vertex AI, BigQuery)
- **Analytics & Visualization:** Tableau, Power BI, Looker, Plotly, Matplotlib, Seaborn, KPI Dashboards, BI Reporting
- **Methodologies:** Agile Scrum, Kanban, Test-Driven Development, CI/CD, DevOps, MLOps

Professional Experience

AI Engineer & Analyst
Kroger Co (Blue Ash, OH, USA) | Feb 2024 – Present

- Designed and deployed **AI-powered** document processing pipelines using **GPT-4**, **AWS Lambda**, **Textract**, and **S3**, reducing manual errors and processing time by 70%.

- Developed **predictive analytics models** using **XGBoost and Random Forest** for sales forecasting, increasing accuracy by 20%.
- Built **real-time Tableau dashboards** for KPI tracking, customer insights, and operational reporting.
- Designed **MLOps pipelines** with **Docker, Kubernetes, MLflow**, enabling CI/CD for ML models.
- Deployed scalable AI workflows on **AWS & GCP**, optimizing cloud resources and reducing costs.
- Conducted **sentiment analysis & topic modeling** with NLP, enhancing product positioning strategies.
- Applied **CNN-based models** for image classification pilots in retail analytics.
- Evaluated **GenAI solutions** with **BLEU & ROUGE metrics** to improve content quality.
- Created **recommendation systems** with embeddings and collaborative filtering for personalized offers.
- Led **Agile sprint planning, stakeholder demos, and technical workshops** to align AI strategy with business objectives.

Technology Consultant – Project Leader
Kelley HOPE Digital Project – IN, USA | Jan 2023 – Aug 2023

- Designed and deployed an **NLP chatbot** for student services, boosting engagement by 75%.
- Built **predictive analytics models** for Indiana startups, improving client revenue by 30%.
- Designed **Tableau dashboards** for customer segmentation, KPI tracking, and sales monitoring.
- Conducted **market sentiment analysis** with NLP & topic modeling, refining go-to-market strategies.
- Automated **ETL workflows** with Python, SQL, and REST APIs, saving 15+ hours monthly.
- Developed **churn prediction models** with Scikit-learn to identify at-risk customers.
- Built **data pipelines** for structured/unstructured data, improving analytics efficiency.
- Delivered **AI insights & dashboards** to faculty and students, driving AI adoption.
- Presented **executive demos** to senior stakeholders and led Agile sprint planning.
- Facilitated **cross-functional collaboration**, ensuring timely and quality project delivery.

Data Analyst
Carbynetech India Pvt Ltd (Hyderabad, TG, India) | Aug 2019 – May 2022

- Automated **manufacturing workflows** using **Python, SQL, and Power BI**, reducing manual errors by 30%.
- Migrated **1TB+ structured/unstructured data** into **Azure Data Lake**, improving reporting efficiency.
- Designed **ETL pipelines** using **SQL, Python, and Spark** to centralize enterprise data.
- Built **predictive maintenance models** with **Random Forest & XGBoost**, reducing downtime.
- Created **interactive Power BI dashboards** for executive decision-making and KPI tracking.
- Optimized **SQL queries & indexes**, reducing reporting latency by 40%.
- Developed **Python-based validation scripts** ensuring compliance and data accuracy.
- Conducted **root cause analysis** on production failures using statistical methods.
- Integrated **IoT sensor data** into predictive models, improving operational insights.
- Standardized **data governance & compliance frameworks** to meet regulatory standards.

Academic Projects

- **Automated Disposition Review (EY):** Built compliant data retention workflow using Microsoft Purview, Power Automate, and PowerShell.
- **Imbalance Classification (IU):** Applied SMOTE and ML models (**Random Forest, XGBoost**) for predicting streaming service adoption.
- **GenAI Research Idea Generator (IU):** Built AI tool with **GPT-3, LangChain, Pinecone** to recommend academic research ideas (evaluated with BLEU & ROUGE).
- **CNN Image Classifier (IU):** Developed and trained a **Convolutional Neural Network (CNN)** in TensorFlow/Keras, achieving **92% accuracy** on image classification.

Education

- **M.S. in Information Systems** – Kelley School of Business, Indiana University, IN, USA (2022 – 2023)
- **B.Tech. in Electrical and Electronics Engineering** – Mahindra University, TG, India (2018 – 2022)