PRAVALIKA SHERI

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PROFESSIONAL SUMMARY

- AI/ML professional with 3 years of experience improving model accuracy by 35% for enterprise information systems.
- Designed and deployed scalable AI/ML solutions using TensorFlow, PyTorch, FastAPI, CI/CD, and MLOps on AWS & Azure.
- Collaborated with cross-functional teams in Agile environments to deliver business-aligned, production-grade AI solutions.

EDUCATION

University of Dayton, Ohio | **MS in Computer Science** May 2025 | GPA: 3.96

SKILLS

Programming Languages: Python, R, Java, C++, JavaScript, SQL
AI/ML & Gen AI: Deep Learning (CNN, RNN, LSTM, GANs), TensorFlow, Keras, PyTorch, Supervised & Unsupervised Learning, Reinforcement Learning, NLP, Scikit-learn, OpenCV, NLTK, Spacy, XGBoost, LightGBM, Matplotlib, Seaborn, A/B testing, LLMs (OpenAI GPT, LLaMA), Hugging Face Transformers, Fine-tuning, Prompt Engineering, LangChain, Vector Databases, RAGs, Quantization Techniques, MLops. Recommendation Systems
Tools & Frameworks: VS Code, Anaconda, Tableau, Microsoft Excel, GIT, GitHub, Postman, FastAPI, Flask, Django, RESTful APIs, Apache Web Server, Apache Airflow, Apache Spark, Docker, CI/CD (Kubernetes), Unit Testing, Microservices
Other Skills: AWS (S3, Lambda, EC2), Azure, MySQL, GraphQL, MongoDB, HDFS, Agile (Scrum)

PROFESSIONAL EXPERIENCE

ARTIFICIAL INTELLIGENCE ENGINEER | UNIVERSITY OF DAYTON, OHIO **OCT 2023 – MAY 2025**

- Designed and deployed a scalable **RAG Chatbot** integrating crop datasets, farming data, real-time weather APIs, USDA soil surveys, and personal farm device data for tailored agricultural advice to farmers.
- Implemented a vector search system using **ChromaDB**, **Qdrant Vector Databases**, **Langchain** and **LlamaIndex** for efficient feature extraction and **SOTA** embedding retrieval.
- Performed **Prompt Engineering** for precise, context-aware query responses achieving over **96%** factual accuracy.
- **Fine-tuned** a **LLaMA 8B** model using **5,000** labeled **Q&A** pairs via **SFT, LoRA** & **PEFT**, followed by **RLHF** optimizing model recommendations and dialogue quality for production readiness.
- Engineered a **recommendation system** to suggest tailored farming actions and insights based on historical data, environmental context, and user behavior.
- Developed a robust **FastAPI** backend with **REST** and **WebSocket APIs** for real-time communication and user session management.
- Containerized the backend using **Docker** and deployed it on **Azure BlobStorage**, ensuring scalability and seamless integration with a real-time frontend chat interface to support over **50,000** users with sub-second response time.

MACHINE LEARNING ENGINEER | OPENTEXT, HYDERABAD, INDIA **AUG 2021 - JULY 2023**

- Processed **1M+** vendor records using **MySQL** and automated **ETL** workflows via **Apache Airflow**.
- Trained **Random Forest** with **GPU** acceleration, achieving **4×** speedup and **80%** improvement in fiber layout predictions.
- Developed **RESTful APIs** to serve model predictions and integrate with project management dashboards.
- Packaged **Scikit-learn** pipeline, containerized with **Docker**, and deployed on **Azure** for scalable inference.
- Automated **CI/CD** with **Git** and **GitHub Actions**, reducing manual deployment tasks by **90%**.
- Cut average project delay from **41.7 to 6.5 days (84.4%)**, enhancing 5G tower rollout planning.
- Integrated AI insights into workflows, coordinating with teams using **Agile** and **JIRA**.

PROJECTS

MULTI-AGENT REINFORCEMENT LEARNING SYSTEM

- Architected a Multi-Agent Reinforcement Learning system using **DQN** and **A2C** to train competitive AI agents in **Python**.
- Achieved **99%** target rate within **2K** episodes by optimizing policy initialization, reward shaping, and reducing **bias** by **18%** and **variance** by **22%.**
- Analyzed training results and agent performance with **Pandas**-driven data pipelines to **fine-tune** model outcomes and improve learning stability.

AI-POWERED INTERVIEW PREP ASSISTANT

- Developed a conversational AI tool using **LLaMA** and **GPT** to simulate ML and coding interviews with >**90%** response accuracy.
- Built **NLP** pipelines for resume-job matching, increasing keyword alignment by **40%** using **Transformers** and **Spacy**.
- Created a recommendation system generating **100+** personalized question sets based on user skill level and feedback.
- Supported **15+** college peers in interview prep; **6** successfully landed offers at top tech companies.

WIKIPEDIA CHATBOT

- Built a **Retrieval-Augmented Generation** (RAG) chatbot integrating **Web Scraping, Indexing,** and **Query Handling.**
- Leveraged Sentence **Transformers** for embedding **60,000+** Wikipedia documents, TF-IDF and **Cosine Similarity** for retrieval and re- ranking, and **OpenAI GPT API** for precise, context-aware responses.

SHORT-TERM LOAD FORECASTING USING METEOROLOGICAL PARAMETERS & ML TECHNIQUES

- Designed an end-to-end forecasting pipeline using **XGBoost, LightGBM, TensorFlow, and PyTorch** on weather and energy data.
- Boosting algorithms outperformed **SVMs** by **19%** in RMSE, improving overall forecasting accuracy by **27%.**
- Engineered scalable data pipelines **(Pandas, NumPy)** to integrate meteorological features and temporal patterns **(RNN, LSTM).**
- Automated model training and evaluation workflows and presented insights with SHAP to support grid optimization.