Sai Sri Swetha Battu

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Professional Summary

GenAI Engineer with 3+ years of experience architecting, developing, and deploying scalable AI-driven web applications, specializing in Agentic AI and multi-agent systems for enterprise solutions. Demonstrated expertise in building Model Context Protocol (MCP) and Agent-to-Agent (A2A) integrations, as well as CrewAI frameworks for advanced automation. Proficient in designing and implementing Retrieval-Augmented Generation (RAG) pipelines, integrating high-performance ML models, and creating robust RESTful APIs. Strong technical foundation in Python, JavaScript, SQL, and cloud platforms (AWS, GCP, Azure), alongside containerization (Docker, Kubernetes) and CI/CD best practices. Proven track record of boosting system efficiency by 25%, optimizing real-time data processing, and establishing end-to-end model observability. Currently focused on applying AI/ML and full-stack engineering to deliver innovative, production-ready, and domain-specific AI solutions for manufacturing, supply chain, and digital transformation.

Projects/Applied Experience

Cognitive HOI Reasoning – Research Project   Apr 2023 – Mar 2024

- Investigated human-object interaction models on **Bongard-HOI** and **HAKE datasets**, identifying reasoning gaps between synthetic and real-world image understanding.
- Applied **DVRL** and **Componential Analysis**, raising model accuracy from 55% to 80%.
- Contributed novel insights into bridging cognitive paradigms in computer vision.

Personal Attorney – Legal RAG Assistant   Apr 2024 – Nov 2024

- Built a **Retrieval-Augmented Generation (RAG)** system to provide state-specific DMV/legal information, reducing expensive LLM retraining costs.
- Implemented with **ChromaDB, LangChain, FastAPI, DeepSeek 8B (LoRA fine-tuning)**, enabling scalable updates without retraining.
- Delivered practical support for immigrants navigating complex legal frameworks.

SmartMed AI – Pill Detection App   Jan 2025 – Aug 2025

- Developed a computer vision pipeline using **YOLO (v5–v12)**, multi-scale detection, attention modules, and frame-to-frame tracking to handle overlapping pills.
- Deployed solution for pharmacies, improving operational accuracy and reliability in pill recognition tasks.
- Tech Stack: **PyTorch, OpenCV, ResNet, FastAPI, AWS**.

Time-Series Forecasting – Stock Market Analysis   Sep 2025 – Running

- Designed forecasting models for volatile financial time-series data.
- Compared traditional **ARIMA/SARIMA** with advanced methods like **Meta's Prophet** and **XGBoost ensembles**.
- Improved accuracy in predicting market fluctuations under high volatility conditions.

Technologies

Programming Languages: Python | Java | C/C++ | JavaScript | SQL | NoSQL | Algorithms & Data Structures

Machine Learning & AI: Model Training | Fine-Tuning | Deployment | Optimization | Large Language Models (LLMs) | Generative AI (GenAI) | Deep Learning | NLP | Computer Vision | Prompt Engineering

Frameworks & Cloud Platforms: PyTorch | TensorFlow | Keras | scikit-learn | Hugging Face Transformers | LangChain | FastAPI | Flask | Pandas | NumPy | SQLAlchemy | AWS (S3, EC2, SageMaker) | Azure ML | GCP AI/ML | Docker | Kubernetes | CI/CD | MLflow | Kubeflow | Airflow | Google Colab

Strengths & Tools: Git | GitHub | Postman | PyCharm IDE | ITSM Tools | Problem Solving | Debugging | Clean Code | Object-Oriented Programming | Design Patterns | Collaboration | Communication | Attention to Detail

Education

University of Bridgeport, M.S. in Computer Science   Aug 2023 – Dec 2025
- Focus on Artificial Intelligence, Full-Stack Development, and Cloud Computing
- Relevant Coursework: Advanced Machine Learning, Cloud Computing, Software Engineering

Adikavi Nannaya University (AKNU), BCom with Computer Science   Jun 2019 – Jun 2023
- Completed coursework in Data Structures, Algorithms, Operating Systems, and Databases
- Academic Projects: Open Banking API Aggregator for Seamless Financial Data Integration

Experience

Starrez Developer, University of Bridgeport – Bridgeport, CT   Aug 2024 – Apr 2025
- Managed and customized the StarRez housing portal to support student housing operations across semesters.
- Developed and deployed StarRez Wizards to streamline housing applications, automate deposit processing, and support semester-specific procedures, reducing manual workload and errors.
- Integrated housing workflows with AwareManager and UpKeep portals, accelerating maintenance coordination and facilities management response times.
- Built automated tools for dynamic reporting and portal updates using Python and AWS, which boosted operational efficiency and enabled real-time insights.
- Collaborated with cross-functional campus departments to optimize data integration and elevate user experience across multiple platforms.