Viresh Duvvuri

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AI Engineer

AI Engineer specializing in multi-agent systems and AI orchestration, with 5+ years developing production GenAI solutions through rapid prototyping, iteration, and context engineering. Led cross-functional teams in deploying AI agents that improved efficiency by 50-80% within 3 months, establishing MLOps pipelines and evaluation frameworks for scalable AI solutions on AWS/Azure.

SKILLS

Programming: C++, FastAPI, Flask, JavaScript, NumPy, OOP, Pandas, Python, React, SQL, TypeScript

AI/ML Frameworks: Agentic AI, LangChain, LangGraph, Multi-Agent Systems, MCP (Model Context Protocol), RAG, Context Engineering, Prompt Engineering, Model Evaluation, MLOps, GenAI, FAISS, Feature Engineering, Human-in-the-Loop (HIL), Model Deployment, Pinecone, PyTorch, Responsible AI, Scikit-learn, TensorFlow, Vector Search

Cloud & Infrastructure: AWS, Azure, API Design, Deployment, DevOps, Docker, Kubernetes, Monitoring, Performance Tuning, Scalability, Workflows

Data & Analytics: Data Integration, Data Processing, Data Science, Enterprise Integrations, Enterprise Systems, Knowledge Graph, Operational Efficiency

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WORK EXPERIENCE

Grid CoOperator | AI Engineer • Full-time

03/2025 - Present | Seattle, WA

- Led design and deployment of domain-specific agentic AI agents for smart grid analytics, collaborating cross-functionally with business stakeholders to translate operational requirements into multi-agent systems using LangChain orchestration and prompt engineering strategies that reduced analyst workflows by 70% within 2 months through rapid iteration
- Architected AI orchestration system where specialized agents communicate and coordinate for complex analytics tasks, deployed on AWS with observability and cost monitoring, established model evaluation pipelines tracking quality metrics, latency, and performance to achieve reliable enterprise performance within 6 weeks across 50-100 daily queries
- Deployed production AI system to cloud infrastructure with CI/CD pipelines, monitoring, and performance optimization, accelerating deliverables by 60% within first quarter through rapid experimentation, iterative prompt engineering, and continuous improvement

Freefly Systems | Senior Software Engineer • Full-time

11/2021 - 10/2025 | Woodinville, WA

- Built AI co-pilot for automated log analysis using React, Python Flask, and foundation model APIs (Ollama, Llama 3.2), deployed to production on cloud infrastructure with model evaluation metrics and monitoring, reducing manual workflows by 80% within 3 months through rapid iteration and prompt engineering
- Coordinated cross-functional projects translating business requirements into technical solutions, implementing software design principles and testing frameworks across engineering divisions
- Enhanced flight control systems with microservices architecture and CI/CD pipelines, improving deployment efficiency by 60% over 6 months

Lumenier | Software Engineer - Embedded Systems • Full-time

07/2020 - 10/2021 | Sarasota, FL

- Implemented custom software using C++ and data structures for specialized applications, enabling autonomous capabilities within 8 weeks

- Enhanced system performance through algorithms and data ingestion pipelines, improving operational efficiency by 45% across environments
- Architected testing frameworks with software design principles, reducing implementation issues by 30% within 3 months

York Exponential | Software Engineer - R&D • Full-time

08/2018 - 05/2020 | York, PA

- Created Human Machine Interface for collaborative welding using Python, Kivy, and ROS2, reducing operator programming complexity by 50% within 4 months
- Developed autonomous robot prototype using computer vision and machine learning from requirements to working deployment

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EDUCATION

Master of Science in Computer Science Washington State University | Pullman, WA, USA • 01/2015 - 01/2017

Bachelor Of Technology in Information Technology GITAM University | Visakhapatnam, India • 01/2011 - 01/2015

PROJECTS

GridCOP: Smart Grid Analytics Agent | Grid CoOperator

- **Problem:** Power grid analysts needed automated database querying and intelligent insights to understand complex data patterns beyond basic visualizations
- **Solution:** Developed A2A multi-agent system using LangChain orchestration and MCP where specialized agents coordinate tasks through prompt engineering strategies, implemented RAG and vector search (FAISS) for intelligent querying, implemented model evaluation frameworks to monitor quality and cost metrics, deployed on AWS with observability and logging
- **Impact:** Enhanced analyst productivity by 70% through AI co-pilot that augments domain experts with automated workflows, implemented human-in-the-loop (HIL) evaluation and testing pipelines for production-ready AI systems with robust error handling through rapid iteration

Production System Optimization Tool | Freefly Systems

- **Problem:** Manual system analysis taking hours of expert time, creating bottlenecks in product development and customer support resolution
- **Solution:** Built full-stack application with React frontend, Python Flask backend, integrated foundation model APIs (Ollama and Llama 3.2) for real-time log processing and interactive analysis using prompt engineering and model evaluation
- **Impact:** Transformed expert analysis from hours to minutes, deployed to production serving 200+ daily queries with significant performance improvements through rapid iteration and continuous optimization

AI Travel Planner Agent | Personal

- **Problem:** Manual travel planning requiring hours of research across multiple sources with inconsistent and outdated information
- **Solution:** Built AI agent using Claude 3.5 Sonnet, LangChain, Streamlit, and DuckDuckGo Search API for personalized itinerary generation using prompt engineering techniques
- **Impact:** Demonstrated end-to-end AI application development, learned conversational AI patterns and real-time data integration techniques through iterative development