

Viresh Duvvuri

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AI Engineer specializing in building and shipping end-to-end agentic workflows and internal tools, with 5+ years developing production AI solutions that deliver measurable operational impact. Builder-first mindset with proven track record shipping agent-based systems identifying high-impact opportunities, enabling teams through documentation and workshops, and iterating on solutions based on metrics - improving efficiency by 70-80% within 3 months. Strong software engineering fundamentals with expertise in LLM orchestration, prompt engineering, and fast experimentation on AWS.

Skills

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

AI Agent Development: LangChain, LangGraph, Multi-Agent Systems, Agentic AI, Agent Orchestration, GenAI, RAG, Prompt Engineering, Model Evaluation, Model Context Protocol (MCP), Human-in-the-Loop

AI/ML Frameworks: PyTorch, TensorFlow, Scikit-learn, MLOps, Context Engineering, Model Deployment, Feature Engineering

Cloud & Infrastructure: AWS, Azure, Docker, Kubernetes, CI/CD Pipelines, API Design, DevOps, Monitoring, Performance Tuning, Scalability, Observability

Data & Databases: Vector Databases (FAISS, Pinecone), SQL, PostgreSQL, Data Pipelines, Data Processing, Data Integration, Analytics

Work Experience

Grid CoOperator

AI Engineer

Seattle, WA

03/2025 - Present

- Identified high-impact AI opportunities for smart grid analytics operations, designed and shipped production multi-agent system from prototype to deployment automating complex analyst workflows with 70% efficiency gain within 2 months through rapid experimentation and iteration
- Built AI orchestration infrastructure using LangChain and agent frameworks where specialized agents collaborate on complex tasks, deployed on AWS with comprehensive observability and cost monitoring, established evaluation frameworks measuring agent performance across 50-100 daily queries
- Led internal enablement through clear documentation, knowledge sharing workshops, and establishing best practices for prompt engineering and agent design, tracked business impact with metrics dashboards and iterated on solutions based on customer feedback and performance data

Freefly Systems

Senior Software Engineer

Woodinville, WA

11/2021 - 10/2025

- Identified opportunity and built AI-powered internal tool for automated log analysis from concept to production, integrated LLM APIs (Ollama, Llama 3.2) with prompt engineering and evaluation frameworks serving 200+ daily queries, enabling engineering teams to diagnose issues 80% faster through intelligent automation
- Contributed to drone platform codebases implementing new features and optimizations for flight control systems and payload integration across multiple product lines, managed software integration projects from planning through release
- Led release management for drone platforms overseeing testing phases from alpha through production deployment, coordinating firmware updates and executing comprehensive testing protocols with cross-functional teams
- Built automated systems to process complex technical data and identify system failures, developing knowledge base enhancements and support tools that streamlined operations

Lumenier

Drone Software Developer

Sarasota, FL

07/2020 - 10/2021

- Wrote embedded code in C++ to integrate LiDAR and optical flow sensors for obstacle avoidance and position holding with/without GPS under various lighting conditions
- Collaborated with open-source flight control software maintainers for integration, testing, and deployment of autonomous flight algorithms, prototyped innovative features like toss-to-launch for product roadmap development

York Exponential

Software Engineer - R&D

York, PA

08/2018 - 05/2020

- Developed prototype software for in-house autonomous surveillance mobile robots using ROS2, SLAM, and computer vision technologies
- Built Human Machine Interface for Universal Robot welding applications using Python and Kivy framework, implemented multi-robot control systems with platform independence

Education

Washington State University

Master of Science Computer Science

Pullman, WA

01/2015 - 01/2017

GITAM University

Bachelor of Technology Information Technology

Visakhapatnam, India

01/2011 - 01/2015

Projects

GridCOP: Smart Grid Analytics Agent

- 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

- 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

- 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