

# Viresh Duvvuri

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Product Engineer with 5+ years deploying and customizing AI-powered software for enterprise clients, specializing in translating complex technical requirements into production-ready solutions. Proven track record working directly with stakeholders to configure and optimize data-intensive systems, troubleshoot technical challenges in fast-paced environments, and deliver measurable business impact. Strong expertise in Python, SQL, REST APIs, cloud deployment (AWS), and communicating technical concepts to non-technical audiences while shipping solutions rapidly.

## Skills

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

**Databases & Data Integration:** SQL, PostgreSQL, NoSQL, Vector Databases (FAISS, Pinecone), Data Pipelines, ETL, Data Processing, Real-Time Integration, APIs

**Cloud & Infrastructure:** AWS, Azure, Docker, Kubernetes, CI/CD Pipelines, REST APIs, Web Services, System Integration, Deployment, Monitoring, Scalability

**AI/ML Frameworks:** Multi-Agent Systems, LangChain, RAG, PyTorch, TensorFlow, OpenAI APIs, LLM Integration, Prompt Engineering, Model Evaluation, MLOps

**Software Engineering:** Git, Software Testing, API Development, Microservices, Agile Methodologies, Technical Documentation, Cross-Functional Collaboration, Client Communication

## Work Experience

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### Grid CoOperator

AI Engineer

Seattle, WA

03/2025 - Present

- Deployed and configured multi-agent AI platform for enterprise clients (power grid analysts), working directly with stakeholders to understand operational workflows, translate business requirements into technical specifications, and customize software to address mission-critical data analysis use cases, reducing manual effort by 70% within 2 months through rapid iteration
- Built and integrated complex system components including REST APIs (FastAPI), SQL database connections, data pipelines, and third-party web services on AWS cloud infrastructure, troubleshooting technical issues under tight deadlines to ensure seamless data flow and client success with 99%+ uptime serving 50-100 daily queries
- Collaborated cross-functionally with stakeholders and technical teams to relay client feedback, identify workflow optimization opportunities, deliver continuous platform improvements, and communicate technical concepts clearly to non-technical users through demos and documentation, driving measurable business value

### Freefly Systems

Senior Software Engineer

Woodinville, WA

11/2021 - 10/2025

- Deployed GenAI-powered diagnostic platform from prototype to production serving 200+ daily queries, configuring and customizing AI solution for engineering teams' technical troubleshooting workflows, integrating foundation model APIs with data processing pipelines, resolving complex technical issues remotely to enable client success
- Contributed to enterprise-scale drone platform codebases implementing new features and system optimizations for flight control and payload integration across multiple product lines, managed software integration projects from planning through production release in fast-paced environment
- Led release management for mission-critical drone platforms coordinating testing phases from alpha through production deployment, troubleshooting firmware integration issues, executing comprehensive testing protocols with cross-functional teams under tight deadlines
- Built automated systems to process complex technical data and identify system failures, developing support tools that streamlined operations for technical teams in data-intensive environment

### 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

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### **Washington State University**

*Master of Science Computer Science*

### **GITAM University**

*Bachelor of Technology Information Technology*

Pullman, WA

01/2015 - 01/2017

Visakhapatnam, India

01/2011 - 01/2015

## Projects

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### **GridCOP: Enterprise Analytics Platform Deployment | Grid CoOperator**

- Problem: Enterprise clients (power grid analysts) needed customized AI platform to automate complex database querying workflows, requiring deployment engineer to configure system for client-specific use cases, integrate with existing data sources, and troubleshoot technical challenges to ensure seamless adoption
- Solution: Deployed and configured multi-agent AI system using Python (LangChain), integrated SQL databases and REST APIs (FastAPI) for data access, customized platform features based on client requirements, built data pipelines connecting multiple sources, deployed scalable infrastructure on AWS with monitoring and logging, resolved technical issues under tight deadlines
- Impact: Successfully deployed production system within 2 months through rapid iteration with client feedback, achieved 70% workflow efficiency improvement for enterprise users, maintained 99%+ uptime serving 50-100 daily queries, demonstrated strong client communication and technical problem-solving in ambiguous, fast-paced environment

### **Production Diagnostic System Deployment | Freely Systems**

- Problem: Engineering teams needed deployed AI-powered diagnostic solution to troubleshoot complex system failures, requiring configuration for technical workflows, integration with existing data processing systems, and on-site/remote technical support to ensure client success in mission-critical operations
- Solution: Deployed GenAI platform with React frontend and Python Flask backend, configured foundation model APIs (Ollama, Llama) for real-time log analysis, integrated data pipelines and REST APIs, customized system for engineering team workflows, provided technical troubleshooting and optimization support
- Impact: Delivered production deployment serving 200+ daily queries, reduced troubleshooting time from hours to minutes (80% reduction), enabled self-service diagnostics for technical teams, demonstrated ability to ship solutions rapidly and resolve technical challenges in high-stakes environment

### **AI Travel Planner Agent | Personal**

- Problem: Needed rapid prototyping of AI application demonstrating end-to-end deployment capabilities, API integration skills, and ability to deliver functional solutions quickly in ambiguous technical environment
- Solution: Built and deployed AI agent using Claude API with LangChain, integrated DuckDuckGo Search API for real-time data retrieval, created Streamlit interface, applied prompt engineering and evaluation techniques
- Impact: Shipped functional prototype demonstrating rapid development cycle, API integration expertise, and adaptability to emerging AI technologies, validated ability to work independently and deliver solutions in fast-paced environment