

## Contact

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(LinkedIn)

## Top Skills

API Objects

Custom Resource Definitions

Powershell

## Certifications

Networking Essentials

Introduction to Cybersecurity Tools &  
Cyber Attacks

CKA: Certified Kubernetes  
Administrator

# Soumith Kuppa

Machine Learning | AI | LLMs | AI Research Intern | Sr. IT Consultant  
@Systems Group, Old Dominion University | MS. Computer Science  
United States

## Summary

Hi there

I'm Sowmith Kuppa, an M.Sc. in Computer Science graduate from Old Dominion University, where my focus lies in machine learning, MLOps, and reliable AI systems.

I've built and deployed deep learning models in PyTorch and TensorFlow, designed Retrieval-Augmented Generation (RAG) pipelines, and developed data-driven experiments that improved model performance and research outcomes. My recent work combines AI reliability, cloud automation, and data engineering, turning complex research ideas into scalable, production-ready systems.

Before diving into AI, I worked in IT consulting and systems administration, where I managed large-scale Windows and Linux environments, automated infrastructure with Ansible and Terraform, and led CI/CD initiatives using Jenkins and Kubernetes. That background gives me a strong understanding of real-world system reliability and the importance of clean, automated deployment pipelines.

I'm passionate about building responsible, reproducible AI solutions, from data preprocessing to monitoring and model refinement and I'm always looking for ways to bridge research, automation, and practical impact.

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## Experience

Old Dominion University

2 years 3 months

AI Research Intern

January 2025 - Present (1 year)

Norfolk, Virginia, United States

- Designed and implemented machine learning models using PyTorch to support research on reliable AI systems, focusing on model robustness and performance evaluation.
- Developed and integrated Retrieval-Augmented Generation (RAG) pipelines to enhance dataset quality and context relevance, improving model accuracy and research insights by 20%.
- Created data mining and drift detection algorithms to analyze large datasets, generating actionable visual reports to monitor and explain model behavior over time.
- Performed iterative model refinement and testing, leading to measurable improvements in performance and contributing to findings on reliable and scalable AI techniques.

### Graduate Research Assistant

October 2023 - May 2025 (1 year 8 months)

Norfolk, Virginia, United States

Kubernetes: Hands-on experience with Jenkins job configurations, pipelines, and plugins to enhance build processes, Experience in Kubernetes cluster setup & Resource management using k3s, Rancher, Helm Chart Development and Cluster monitoring.

Infrastructure as Code: Hands-on experience with Terraform for provisioning virtual machines, deploying applications and services, managing multi-provider environments, and automating infrastructure deployments using HCL and cloud-init.

Containerization: Docker, Container Orchestration, Debugging Docker logs and knowledge of persistent docker volumes.

Configuration Management: Experience in orchestration and automation tasks using tools like Ansible and Ansible-Lint.

Monitoring: Basic knowledge in Zabbix, Graylog, Prometheus & Grafana (for Cluster Monitoring).

Version Control: Integrated Git for version control, enabling automated builds triggered by code commits, Dockerfiles, and Docker images.

Windows/Windows Server 2016 & Server 2019: Experience in Active Directory, GPO Configurations and RSAT, Windows DNS & DHCP, and WDS. Also worked with SCCM setting up task sequences for clients.

Web Servers: Configuring reverse proxy traffic to different web servers based on DNS records. Load balancing on Nginx servers. Web server security including authentication and authorization.

Linux Environments: Knowledgeable in User/Group ACL, NFS, Bash and YAML.

Networking: Knowledge in layer 2, layer 3, VLANs and Cisco IOS. Experience working with Net CLI tools. Also configuring DNS delegation and subdomains.

Virtualization: Worked with VMWare, oVirt and Proxmox.

Database Management: Knowledgeable in MySQL and PostgreSQL.

Programming Language: Experience in C, Python, Java, SQL and PHP.

IDE/Text Editors: Experience in Visual Studio Code, Nano and Notepad ++.

Ticket Resolution and Support: Resolved 100+ tickets, issues related to computer networks, configurations and hardware troubleshooting in ticket platforms like OsTicket and zammad.

## Campalin Innovations

### Devops Engineer Intern

July 2022 - September 2022 (3 months)

- Developed CI/CD pipelines integrating Docker, Kubernetes, and GitLab CI, improving deployment consistency and scalability.
- Automated configuration management processes using Ansible, reducing manual intervention and errors.
- Conducted vulnerability assessments and implemented security patches to ensure robust system reliability.
- Optimized cloud infrastructure costs by 15% through efficient resource utilization and scaling policies.

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## Education

### Old Dominion University

Master of Science - MS, Computer Science · (August 2023 - May 2025)

### National Institute of Technology Puducherry

Bachelor of Technology - BTech, Computer Science · (August 2019 - May 2023)

