NEHA DANGWAL

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SUMMARY
● **Staff/Principal Engineer** with 9+ years delivering **cross-organizational technical strategy** and architecting high-impact platform solutions at scale.
● Delivered **$17M+ cumulative business value** by designing AI-enabled developer platforms and driving architectural modernization across **250+ engineers**.
● Proven expertise in defining technical roadmaps, leading complex architectural initiatives, and delivering measurable improvements in developer productivity, system reliability, and time-to-market.

CORE COMPETENCIES
Architectural Strategy: Platform architecture, **AI/ML integration**, Technical roadmap planning, System design, Infrastructure modernization, Data-driven decision making.
Technical Execution: Python, SQL, C/C++, FastAPI, **Kubernetes, AWS**, LLMs, GPT-4, CrewAI, **Docker, Microservices**, CI/CD (Jenkins, GitLab), Infrastructure as Code, Prometheus, Grafana.
Organizational Influence: Cross-functional technical alignment, Technical standards and governance, Large-scale program management, CI/CD optimization, Incident response.

PROFESSIONAL EXPERIENCE
Cisco Systems, San Jose, CA Senior Software Engineer & Platform Architect | Jul 2021–Feb 2024
● **Drove the technical strategy** and architectural roadmap for the platform serving **250+ engineers** across **80+ microservices**.
● **Architected** and led the implementation of the "Submit to Commit" initiative's automated quality gates, **reducing bad commits by 30%** and improving code reliability.
● **Owned the architecture** of a cloud-based Python security platform, defining the API and data model adopted by **80+ Cisco products**.
● Defined and executed a 2-year platform roadmap that drove **30% build/test performance improvement** and **$15.4M+ annual productivity gains** through distributed caching and pipeline optimization.
● **Led the technical design** of self-service tools and CI/CD optimizations that **reduced deployment complexity by 70%** and achieved **99.9% uptime SLA**.
● **Drove technical excellence** by designing SQL-based analytics dashboards to analyze bottlenecks, generating actionable insights that drove **30% efficiency improvements**.

Dell EMC, Austin, TX Senior Firmware Engineer | Feb 2016–Jun 2021
● **Served as the technical domain expert** for the Enterprise Server Portfolio, defining test execution strategies and quality standards across **3+ external vendors**.
● **Led 0-to-1 product development** for enterprise hardware platforms, cutting development cycles by 25% through structured innovation and architectural planning.
● **Architected and built** Dell's first on-premises **GPU cloud service using Kubernetes and Docker**, enabling scalable data science workflows.
● **Technical Mentorship: Established and enforced** software architecture, code review, and system design best practices, achieving **95% code coverage** and reducing production defects by 50%.
● **Performance Architect:** Designed solutions improving server uptime by **44%**, system throughput by **40%**, and code performance by **30%** through algorithmic optimizations.

AI & TECHNICAL INITIATIVES

TrainOps Observatory (Lightweight ML Training Observability)

- Novel Research Methodology: Designed and implemented a proprietary **Bottle-neck Detection Engine** that automatically analyzes real-time system metrics (GPU/CPU/I/O) to infer resource contention and training inefficiencies.
- Quantified Impact & Optimization: Developed a **Cost Estimation Engine** that translates technical bottlenecks into actionable recommendations, demonstrating upto **42% potential cost and time savings** per training run.
- High-ScaleInfrastructure:Architectedthefull-stacksystem,includingazero-overhead Python SDK, a Flask API, and **TimescaleDB** integration for high-throughput, time-series metrics ingestion (10k+ data points/sec).

AI Developer Assistant Platform (2024) | Primary Architect

- **Architected** the multi-agent AI system using **CrewAI and GPT-4**, reducing developer time by **50%** on routine tasks.
- Designed the system validation methodology with **20+ engineers** and built **SQL-based analytics** to track assistant effectiveness and usage patterns.

AI-Powered Log Analyzer for Cybersecurity (Personal Project) | GitHub:
https://github.com/nehadangwal/cybersecurity-log-analyzer

- Developed a full-stack web application for **real-time, ML-powered anomaly detection** in system logs.
- Implemented the **Isolation Forest** unsupervised learning algorithm from scikit-learn to detect **multivariate anomalies** across complex log features.
- Built a high-performance system processing **10,000+ log entries per second**, using **Next.js, Flask 3.0, and Docker/Docker Compose**.

AI-Powered Content Infrastructure (2024–Present) | System Architecture

- Designing **NLP pipeline** with quality scoring and human-in-the-loop workflows for technical documentation at scale.
- Building modular system architecture with plugin interfaces for CMS integration, leveraging **Python and SQL**.

TECHNICAL STRATEGY & ORGANIZATIONAL IMPACT

- **Cross-Organizational Technical Alignment:** Led technical solutioning across **250+ developers** and **80+ microservices**, coordinating strategic efforts.
- **Cumulative Business Impact:** Delivered **$17M+ total value** through architectural improvements and developer productivity initiatives.
- **Technical Governance:** Established engineering best practices and architectural review processes adopted organization-wide.
- **Velocity & Quality:** Accelerated product delivery by **6 months** while reducing CI failures by **30%** through robust processes.

EDUCATION & CERTIFICATIONS

- **Master of Science, Computer Science** | State University of New York, Binghamton
- **Bachelor of Technology, Electrical & Electronics Engineering** | Uttarakhand University, India
- **Certifications:** Generative AI for Software Development, Machine Learning Engineering Specialization, Advanced System Design and Architecture