Kumar Dahal

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CAREER SUMMARY

Technical Solution Architect | AI/ML/OPS | Multi-Cloud | DevSecOps | DevOps | Cybersecurity

Highly motivated, results-oriented, and innovative professional with 10+ years of experience in engineering AI/ML/OPS, Multi-Cloud, DevOps, and Cybersecurity, demonstrating an analytical and driven mindset. Possesses versatile hands-on experience in software architecture, researching, designing, architecting, and implementing end-to-end systems on Azure, AWS, and GCP.

Key Responsibilities:

- Lead clients guiding through the process of envisioning, designing, developing, and deploying AI solutions.
- Solution Lifecycle Management: Worked on multiple projects and across multiple phases of the solution lifecycle, from design to implementation.
- AI Solution Development: Designed and implemented both generative AI and traditional data science solutions.
- Business Development Support: Assisted company leaders and sales teams with business development activities, including shaping estimations and sales estimates.

TECHNICAL EXPERTISE

CERTIFICATES:
AI Apprentice, AI Developer, AI Practitioner, AI Architect
ML Programmer, DL Programmer, ML Engineer, ML Architect
DevOps Engineer, Cloud Engineer, CloudOps Engineer, Muti-Cloud Architect

AI/ML/OPS
Platforms (Cloud & On-Premises): Microsoft Azure Machine Learning, Google Cloud AI Platform (Vertex AI), H20, IBM Watson, MS Cognitive Services, Amazon Lex, Amazon Sage maker.
Frameworks (Deep Learning & Machine Learning): Microsoft Cognitive Toolkit (CNTK), Keras (high-level API for TensorFlow/Theano/CNTK), TensorFlow, PyTorch, MXNet, Cortex, Caffe/Caffe2, Scikit-learn and BERT
Algorithms: Supervised Learning, Unsupervised Learning, Reinforcement Learning, Generative Models, Optimization Algorithms and Search Algorithms.

MULTI-CLOUDS:
AZURE: Azure Architect Technologies Certification, Deploy and Manage Virtual Machines, Deploy and Manage Virtual Machines, Configure and Manage Virtual Networks, Manage Identities.

AWS: AWS DevOps Engineer (Professional) Certification, Master the AWS Well-Architected.
GCP: Google Cloud Architect - Cloud Design, Network Components, Web Applications & Name Resolution.

DEVSECOPS/DEVOPS:

Opensource: Git, Jenkins, Docker Architecture, Kubernetes Architecture, HashiCorp Tools, Angular, Elastic Stack, SoarQube, Node.js, React, .Net Core, Ansible, Puppet, Chef, Red Hate, Nagios, Selenium, Google Cola, Jupiter notebook, Spider.
Language: HTML, JSON, XML, CSS, JavaScript, PHP, JAVA, C++ and Python
Methodology: Agile, Kanban, Scrum, SAFe Team, SAFe DevOps,

CYBER SECURITY/DEVSECOPS:

CCSP, CISSP, SY0-601: CompTIA Security+, DevSecOps, HashiCorp Vault, Advanced in Kali Liux.

NETWORK INFRASTRUCTURE:

NFV, SDN, SD-WAN, DPDK, MPLS, VOIP, TCP/IP, DNS, DHCP, VPN, IAS, DOCSIS. Network Architecture and design: Active Directory, Group policy, Terminal Services, Routing and Remote Access, wiring and cable terminations, Hardware based CPE (Intel and ARM).

PROFESSIONAL EXPERIENCE

CADMUS GROUP, Reston, VA   **Apr-2023 – Present**
Cadmus Group is a consulting firm that solves complex challenges for business and government.
Technical Solution Architect | AI/ML/Ops | DevSecOps

Implementation of the solutions that improved business efficiency and reduced operational costs. Collaborated with stakeholders to define technical requirements, align technology strategies with business goals, and ensure successful project delivery. Architecting Government Nutrition Accuracy Clearinghouse (NAC) Systems cloud-based applications, data analytics platforms that significantly enhanced performance and scalability.

- Architected and implemented scalable data integration solutions (ETL) to streamline data flow between diverse client systems and internal platforms, improving data accuracy by 30%.
- Provided expert technical guidance and professional services to key enterprise clients, resolving complex analytical and technical support issues, leading to a 20% increase in client satisfaction.
- Collaborated with cross-functional teams to translate complex business requirements into robust technical specifications and solution designs for AI/ML and cloud initiatives.
- Developed and maintained comprehensive documentation for solution architectures, deployment procedures, and troubleshooting guides to ensure operational efficiency and knowledge transfer.
- Leveraged deep analytical skills to identify root causes of technical challenges and propose innovative solutions that optimize system performance and reliability.
- Leading clients: Guiding clients through the process of envisioning, designing, developing, and deploying AI solutions on Microsoft Azure.
- Solution Lifecycle Management: Working on multiple projects and across multiple phases of the solution lifecycle, from design to implementation.

- AI Solution Development: Designing and implementing both generative AI and traditional data science solutions.
- Business Development Support: Assisting company leaders and sales teams with business development activities, including shaping estimations and sales estimates.

ASRC Federal, Fort Collins, CO   **Mar-2021 – Apr-2023**

Delivers successful mission and elevate performance for federal civilian, defense, and intelligence agencies.

DevSecOps Automation

Architect designed sustainable CI/CD automation for building, test, and deployment of enterprise web applications. Supported, collaborated, and helped others to understand the CI/CD automation functions, pipeline, and the principal practices. Lead in the designed, deployment, and operations of Cloud Platforms – including Azure/AWS/GCP. Monitored of service health, management of service requests, and change management within the infrastructure. Research and implement new Cloud tools to improve efficiency, performance, and cost-effectiveness limit downtime in all environments.

- Led the design and implementation of secure CI/CD pipelines on Azure DevOps, reducing software delivery cycles by 40% while integrating automated security checks.
- Migrated critical on-premises applications to Azure Cloud, optimizing resource utilization and achieving a 20% cost reduction.
- Developed and managed infrastructure as code (IaC) using Azure Resource Manager (ARM) templates/Terraform to automate the provisioning and configuration of Azure resources.
- Implemented and managed Azure security services (e.g., Azure Security Center, Azure Firewall, Azure AD) to enhance the overall security posture of cloud environments.
- Collaborated with development and operations teams to embed security best practices early in the software development lifecycle (DevSecOps).
- Architect supported development, experimentation, continuous integration, continuous delivery, verification/validation, and monitoring.
- Contributed to all aspects of project software development lifecycle from research, prototyping solutions to assessing feasibility, integration with external software systems, development, and product deployment.
- *Deployed and managed applications* running on a mix of Kubernetes, in multi-Cloud and introduced optimizations; resulted in a $15k savings per month.
- *Defined and documented cloud solution architecture*(s) including technical designs and diagrams implementation cloud infrastructure solutions for distributed systems and application.
- *Analyzed, reversed, and finalized* the specifications for tools installation, build, and deployment automation for 40+ services. *Transformed market data* into actionable strategies for continual process change, resulting in an efficiency increase of 65%

Hotel Engine, Denver, CO   **Dec-2018 – Mar-2020**

Provides hotel-booking platform for enterprise clientele designed for business travel.

Multi-Cloud – Enterprise

Responsible for maximizing the value through developing AI/ML automation, and optimizing mission critical deployments in AWS, Azure and GCP, leveraging configuration management, ML/OPS, and DevOps processes. Created and maintain fully automated ML/OPS hyper parameter and DevOps pipelines for code deployment. Actively manage, improve, and monitor cloud infrastructure on AWS, EC2, S3, and RDS, including backups, patches, and scaling. Built and deployed Docker and Kubernetes containerization to break up monolithic app into microservices, improving developer workflow, increasing scalability, and optimizing speed. Implemented Kubernetes cluster AWS (EKS) to manage and orchestrated containers for scalability.

- Worked with Amazon Sage Maker hyperparameter tuning, along with the prebuilt TensorFlow container and MNIST dataset to tune the model. The automating finance system cut business costs by 35%, increased productivity rates by 85%, and eliminated billing errors of 95%.
- *Provide oversight into data architecture* solution implementation, with ability to guide a team of data engineers on projects and groom resources. *Developed and deployed hotel reservation* platform, API integration, and UX/UI design for enterprise.
- *Effectively negotiated sprint goal with the team by slashing 20% of the time* in a single quarter and was able to coordinate 95% of products roadmap completion. *Utilized Python* for inspecting, cleansing, transforming, and modeling data. *Developed new API* integration application with JSON for communicating with centralized hotel API.

Chetu Inc., Plantation, FL   **Jan -2017 – Nov-2018**
Software Development Company provides tailored software solutions from industry specialized developers.

DevOps/Clouds

Collaborated with developers, product managers/owners, end-users, operational leadership, and subject matter experts to understand current and future goals/requirements defining the devops/cloud architecture framework, standards, and best practices, principles, and patterns. Identified, designed, and executed product initiative plans to meet customer/user needs: product vision, roadmap, and requirements documentation. Lead development team to create goals and implementation strategies, which support vision and the mission. Owned measure and demonstrate progress towards goals with metrics created and tracked in partnership with leadership and analytics

- *Devised, developed, and delivered vehicle tracking and agriculture GIS custom software* application for enterprise clientele. *Pioneered GIS in the agriculture* sector by designing interactive mapping system using custom GIS application to integrate into drone and unmanned aerial vehicles (UVA).
- *Utilized SAFe scale framework environment* and version control system reducing development time and increasing the rate of successful deployments.
- *Utilized Mongo DB* NoSQL database to create, read, update and delete documents data. *Automated the deployment of 90+ cloud servers* using Docker, Kubernetes, and Aws with the help of python
- *Simplified infrastructure automation by utilizing tools like Vagrant, Terraform, Packer, and Vault,* you can manage virtual machines, define declarative infrastructure as code, automate machine images, and manage secrets across your infrastructure.

Electronics Row, Wheat ridge, CO   **Dec-2011 – Dec-2016**
Consumer electronics products manufacturer and corporate incentive program for corporation industry.

DevOps Automation

Designed and architect on one or many cloud computing providers (e.g. GCP, AWS, Azure) of modern data movement technologies (e.g. serverless, real-time, as needed computing, low latency data movement, high volume data management. Lead the implementation of DevOps processes to deliver code quickly with a high degree of confidence and quality. Lead and supported the Product Owners Community of Practice by facilitating collaboration of cross organizational teams to establish, develop and roll out new and enhanced capabilities. Recognized as the "go to" leader and trusted advisor for product set. Work collaboratively with the team of Product Owners. Communicate value and status to various stakeholders and levels of management.

- *Developed of the Data Platform* consisting of the data lake, analytics environment, enterprise data warehouse, and visualization tools. Identified and translated Big Data challenges into technical approaches yielding actionable recommendations across multiple, diverse domains.

- *Conceptualized, built/developed e-commerce/business platform* for incentive programs launched, marketed, and maintained enhanced product features annual $8.6 million in revenue. *Responsible for product enhancement, market campaign, market research* and maintained solid proprietary responsible for increasing subscription, for incentive program throughout USA and Canada.
- *Led continuous improvement efforts* to develop interfaces in support of multiple databases, systems, and technologies including VMware, AWS and MS SQL. *Managed Docker orchestration* and Docker containerization using Kubernetes.

Integra Telecom, Denver, CO   **Dec-2009 – Nov-2011**
Telecommunication infrastructure and Service Company
Cloud Cybersecurity Engineer
Lead cybersecurity efforts across multiple cloud environments and ensuring secure configuration. Implemented traditional security protection equivalent to cloud-based platforms and applications including container architectures in a DoD environment. Leverage experience with multi-cloud migrations and container architectures (Kubernetes) to apply cybersecurity solutions, establish best practices and develop Standard Operating Procedures (SOPs).

- *Assisted cybersecurity operations, solution engineers*, developers, and other team members to adopt cloud and container technologies.
- *Supported the program manager in cybersecurity efforts* and aid in effective decision making.
- *Reviewed architectures* to ensure security compliance researched, suggested, and help implement industry best practices and tool sets.
- *Coordinate and assist with cybersecurity reviews*, including generation of security artifacts, implementation statements, standard operating procedures.

MasTec Technology, Centennial, CO   **Dec-2006 – Nov-2009**
Infrastructure engineering and Construction Company
Network Security Engineer
Responsible for the acceptance and delivery of all projects and tasks related to network systems integration, voice systems integration, cybersecurity, and implementation and testing in remote locations. Actively execute project plans for current initiatives including server builds and installation, router and VPN configurations and installation, and security maintenance.

- *Managed and remediation* of network infrastructure, data center, and cybersecurity risks and vulnerabilities identified in the environment.
- *Interacted with enterprise stakeholders* (i.e. IT Security, GRC, IA, Legal, HR, etc.) as required to help prioritize and remediate network infrastructure and cyber risks and assess compliance status.
- *Provide tactical recommendations on improving network*, infrastructure and cybersecurity processes and practices to expedite risk remediation efforts.
- *Familiarity with network, infrastructure*, and cyber tools (i.e. Cisco, Mimecast, Trend, Solar Winds, Kali Linux, Venafi, Qualys, and/or other tools) to identify, exploit and remediate observed vulnerabilities.

Long Building Technologies, Englewood, CO   **Jan-2004 – Nov-2006**
Building integrator provide products and services in building automation and security solutions.

Network Administrator

Designed and constructed local area network and wide-area network connecting seven location offices to corporate headquarters. Oversaw setup of servers and desktop workstations. Recruited and trained network and desktop support technicians. Prepared budgets and managed expenses. Configured routers, firewalls, domain name services, e-mail, Web, and ftp services.

- Designed new systems application that provided Web-based monitoring of all telecommunications.
- Established technical infrastructure requirements, including voice communications, voice over IP, hardware/software applications, PBX, CMS, server applications, SQL database and Meeting Place.
- Analyzed costs resulting in reduction of $5M in redundant technology-related expenses. Identified significant drain on corporate budget, reduced expenses by 50% within 90 days.

EDUCATION

Bachelor, **Major Computer Science,** 1996 – Bhaktivedanta Gurukula International, Mathura, UP India
Information Technology, Diploma 1993 – Sri Dham Mayapur School, Nadia, WB India
High School, 1989 – Siddhartha Vanasthali Institute, Kathmandu, Nepal

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ARTICLES

(1) Exploring the Vulnerabilities of Cryptographic Systems
(2) Unlock the Power of Automation
(3) AI enterprise planning with IT enterprise planning
(4) How the cloud data life cycle guides security efforts in the cloud.
(5) How the cloud data life cycle guides security efforts in the cloud.
(6) Cloud Migration Plan: A Comprehensive Guide
(7) Exploring the Benefits of Public, Private, Hybrid, Multicloud and Polycloud
(8) Neural Networks Overview
(9) What is Footprinting & Countermeasures
(10) Explainable AI, or (XAI)
(11) COMPARING DEEP LEARNING AND MACHINE LEARNING
(12) KUBERNETES CLUSTER ARCHITECTURE
(13) Securing MLOps Pipelines with DevSecOps