Kshitij Dhara

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EDUCATION

Carnegie Mellon University, Heinz College, Pittsburgh, PA   August 2023 – December 2024
Master of Information Systems Management
Coursework: Cloud Computing, Distributed Systems, Database Management, Intermediate Statistics, Object Oriented Programming in Java, Organisational Design and Implementation, Business Writing, Agile, Machine Learning Applications, Cloud Native Development

Savitribai Phule Pune University, Pune, India   January 2018 - April 2022
Bachelor of Engineering in Electronics and Telecommunication with a Minors in Data Science and Visualisation
Coursework: Internet of Things, Artificial Intelligence, Machine Learning, System Programming and Operating Systems

SKILLS

- **Programming Languages**: C | C++ | Java | Python | Bash | Shell Scripting | YAML | Scala
- **Tools**: Ansible, Google Cloud Platform, Amazon Web Services, Microsoft Azure, Jenkins, Kubernetes, Nomad, Docker, Puppet, Nagios, Prometheus, Git, Helm,Terraform, Vagrant, Backend Services, Linux Hardening, SQL, NoSQL, RabbitMQ, RESTful APIs, gRPC, Spark, Kafka, Feature Engineering, CI/CD, TCP/IP Networking, Serverless and Distributed Computing, Grafana, Service Mesh, KrakenD, HAProxy, Vault, Chaos Engineering, Splunk, Cilium
- **Certifications**: Associate Cloud Engineer - Google Cloud, Azure Fundamentals AZ-900 - Microsoft Azure

WORK EXPERIENCE

Research and Teaching Assistant, Carnegie Mellon University, Pittsburgh, PA   June 2024 - Present
- **Implemented Advanced Quantisation Techniques**: Developed and optimised Static, Dynamic, and PAT quantisation methods in LLM models, enhancing model efficiency and inference by **20-45%** based on the models and quantisation methods
- **Conducted Student Support Sessions**: Led weekly office hours for the Machine Learning Applications course, assisting over 50 students in overcoming project challenges, resulting in a **15%** improvement in overall project completion rates
- **Designed and Implemented Cloud Projects**: Created and introduced a comprehensive project for the Cloud Administration course, teaching advanced Kubernetes configurations and deployment strategies on public cloud infrastructure. This project improved students' practical understanding of Kubernetes by **40%**
- **Developed Cloud-Native Projects**: Devised a new project for the Cloud Native Development course focusing on chaos engineering and Istio Service Mesh using ArgoCD, enhancing students' hands-on experience with cutting-edge cloud technologies by **25%**

DevOps Engineer Intern, Centric Software, Campbell, California   May 2024 - August 2024
- **Optimised Cloud Infrastructure:** Developed and deployed a custom Terraform tagging module, improving cloud resource management and cost allocation by **20%**. Implemented and managed PostgreSQL and MSSQL databases on Azure, enhancing performance, test coverage and security to set up highly available systems along with automated testing frameworks
- **Enhanced Deployment Efficiency:** Spearheaded the setup and configuration of RKE2 on RHEL 9.3 for on-premise infrastructure, and automated deployment processes using Terraform and Helm, reducing deployment time by **30%**
- Configured and secured ActiveMQ in a TLS environment, contributing to the reliability and security of client messaging systems, and optimised cloud network architecture by implementing advanced firewall rules

Systems Engineer, ACI Worldwide, Pune, Maharashtra, India   July 2022 - July 2023
- **Monitored** and **efficiently** addressed alerts in both **PCI** and **Non-PCI** environments for ACI projects, ensuring **low latency**, **minimal replication lag**, and **uninterrupted high availability** including performance tuning and optimisation of Linux Systems
- **Configured** and **managed RabbitMQ and Ansible** for ACI projects, streamlining message handling and communication
- **Spearheaded** the **packaging** and **configuration** of **Python** scripts and modules, enhancing project development and deployment
- **Optimised** automation scripts and integrated automation and CI/CD tools, **elevating task efficiency** and **resilience by 30%**

PROJECTS

Twitter Analytics   January 2024 - May 2024
[AWS EKS, AWS RDS, Kubernetes, Docker, Kops, Prometheus, Redis Cache, AWS CloudWatch, Terraform, MySQL, Vert.x, Go, Python]
- **Achieved a 70,529 RPS throughput for Blockchain service** using AWS EKS and managed node groups, optimising cloud resources for cost efficiency under **$1.28 per hour**. **Reduced system latency to 7.64 ms for blockchain and 4.77 ms for QR Code services** by leveraging AWS CloudWatch and Prometheus for real-time infrastructure monitoring and performance tuning and multi-threading and software code testing for optimisation using RESTful and gRPC APIs. **Optimised web tier architecture** by configuring compute instances to enhance resource allocation, achieving **97.55%** correctness in live testing through performance testing and optimisations using comprehensive test suites for RESTful and gRPC APIs

Last Mile Delivery   September 2021 - March 2022
International Research Journal of Engineering and Technology (IRJET) | Volume: 09 Issue: 05 | May 2022
- **Spearheaded** the development of an **open-source**, **plugin-based route optimisation algorithm**, adeptly blending the **Traveling Salesperson** and **Vehicle Routing Problems** using advanced data structures and Graphing algorithms. Designed to prioritise **speed** and **efficiency**, the algorithm dynamically accounts for real-time factors such as accidents, traffic, vehicle availability, and fuel consumption, significantly **reducing delivery time** and **distance traveled** for a fleet of vehicles

Project Sahayata   March 2021 - May 2021
Google Cloud Code_Love_Hack Hackathon Challenge #3 Winner
[Python, Google Cloud Platform, Firestore, JavaScript, Kubernetes, Docker, Cloud CDN, Cloud DNS, and Cloud Firewall]
- **Conceptualised** and **developed** a two-tier platform **bridging the gap** between NGOs and volunteers, where the NGO tier enabled NGOs to list events, websites, and posters, while the Normal tier facilitated users in discovering NGOs by categories, volunteering, and making direct donations, showcasing innovative problem-solving skills and social responsibility