ADITI PRABHAKAR PATIL

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EXPERIENCE:

Amazon, NYC, New York, USA | **Software Dev Engineer, Payment Storage and Transmission Services**   *June 2025 - Present*
- Led the migration of legacy Payment Service from **JDK8 → JDK17,** addressing integration dependencies, security, and performance risks.
- Upgraded **AWS CDK v1 → v2**, addressing **CDK Deadly Embrace** issue, ensuring migration stability within CI/CD environments.
- Performed extensive root-cause analyses (RCA) and created an **Improvement Design** proposing detailed Integration-Test workflows, creating beta testing frameworks, safer deployment strategies, and an AI-based deployment evaluation tool.
- Refined **CloudWatch composite-alarm** thresholds for key latency and error metrics, improving incident detection accuracy and reducing false positives during On-Call Operations of Payment Services. Raised Unit test coverage for code base 30% → 68%.

TechStack: *Java, TypeScript, Dagger, AWS CDK v2, CloudFormation, AWS Step Functions, AWS Lambda, AWS CloudWatch.*

Illumio Inc., Sunnyvale, CA, USA | **Cloud Engineering Intern, Architecture Team**   *May 2024 - Dec 2024*
- **Horizontally scaled** Redis Server for Illumio's Core Product, achieving a **30x boost** in calculation efficiency and **4x workload capacity**, while enabling high availability by developing a cross-platform orchestration tool.
- Created **Kubernetes (K8s) deployments with Helm charts, ArgoCD, and Jenkins,** ensuring seamless CI/CD processes; developed dashboards using Azure Data, KQL, and Grafana for actionable insights and monitoring.
- Replaced polling mechanisms with a **distributed, real-time** policy synchronization system by adding a Java microservice to existing architecture**,** using **message queues and Kafka**, enhancing consistency, reliability, and efficiency.

TechStack: *Java, Python, Ruby, Redis, Linux, PostgreSQL, KQL, Kubernetes(K8s), ArgoCD, Helm, Microsoft Azure, Kafka, Lua, Grafana.*

Citigroup Inc., Pune, India | **Application Developer, Prime Brokerage Technology**   *July 2021 - Aug 2023*
- Transitioned from a monolithic swap reporting system to a microservices-based architecture using Java, Kotlin, and Kubernetes**, increasing accuracy by 97%** and integrated cloud storage technologies like Amazon S3 for low-latency delivery of reports.
- Developed **Data Lineage Application** to automate report generation from Talend Job metadata, ensuring data integrity and governance using Java Design Patterns.
- Built dashboards in Kibana and **analyzed trade data** with ElasticSearch, enhancing **data observability** and **operational insights.**
- **Optimized ETL workflows** by migrating Scheduling Applications to Angular 12, Spring Boot, and REST APIs, while managing cloud storage (Amazon S3) and CI/CD pipelines (Jenkins, Kubernetes) for automated deployments.

TechStack: *Java, Kotlin, Spring Security, SpringBoot, Maven, Gradle, Angular, Kubernetes, Jenkins, RedHat OpenShift, ElasticSearch, uDeploy*

Nife Labs Pte Ltd, Singapore | **Machine Learning Researcher, Founder Team**   *June 2020 - Apr 2021*
- Developed and optimized **deep learning models** for **robotic applications**, achieving **70% latency reduction** through **AI acceleration** and **model compression** using Intel OpenVINO.
- Implemented **real-time object recognition** systems using YOLOv3, improving performance in **autonomous robotic workflows** with **computer vision** and **edge-based inference**.

TechStack: *Edge/Cloud Computing, Python, Golang, OpenVINO, AWS, Raspberry Pi, IoT, Computer Vision, Robotics, OpenCV.*

EDUCATION:

San Jose State University, San Jose, CA | **Masters in Software Engineering**   *Aug 2023 - May 2025*
Coursework: *Distributed Systems, Enterprise Software Platforms, Data Mining, IoT, Application Development, Security*   ***GPA: 3.8***
Cummins College of Engineering for Women, India | **B.Tech in Information Technology**   *Aug 2017 - May 2021*
Coursework: *ML, AI, NLP, Information Retrieval, Big Data and Analytics, Object-Oriented Programming, Design Patterns, Data Structures and Algorithms, Computer Networks, Cloud Computing, Computer Architecture, DBMS.*   ***GPA: 8.81***

TECHNICAL KNOWLEDGE:

Languages: Java, Python, Kotlin, Bash, C, C++, Go, SQL, TypeScript, Ruby.
Technologies: IPv4/IPv6, TCP/IP, WebSockets, SOAP, REST APIs, Linux, Apache Kafka, Spring MVC, JUnit, Angular, React, Node.js.
DevOps: Jenkins, Kubernetes (K8s), Docker, AWS, ElasticSearch, Maven, Gradle, Docker, RedHat OpenShift, SSH, ELK, IaaS, SaaS, GCP.
ML & AI: Langchain, Autogen, Agentic workflow, LLMs, TensorFlow, OpenCV, Deep Learning, NLTK, PyTorch, Numpy, NLP, MATLAB, Simulink.
Database and Data Science: RDBMS, MySQL, PostgreSQL, NoSQL, MongoDB, Redis, Tableau, Kibana, Grafana.
Certification: NVIDIA-Certified Associate: Generative AI Multimodal**,** CCNA: R&S (Introduction to Networks, Routing & Switching Essentials).

PROJECTS:

Financial Analysis Application - Ledger Alchemy (Fullstack Web Application)
- Developed a **FinTech portal** for analyzing multi-bank transactions with **advanced data analysis and dashboards**, boosting financial management and decision-making. Developed **Web Services and microservices** for scalable Cloud Infrastructure following Agile in SDLC.
- Incorporated Machine Learning for **91% accurate user goal predictions**, secured using **Single Sign-On (SSO) and Multi-Factor Authentication (MFA)**. Deployed on **Oracle Cloud** via Docker for optimal scalability and reliability.

TechStack: *RESTful APIs, CI/CD pipelines, Distributed Systems, Node.js, Express, React, Redux, MySQL, Tableau, Docker, Rabbit MQ.*

Natural Language Processing for Indian Sign Language (Received $16000 grant from IBM)
- Developed an **Attention-based Encoder-Decoder model with LSTMs** to translate Indian Sign Language (ISL) into English, achieving a BLEU score of 32% with a custom dataset of 400 instances and a 1,000-word vocabulary. Integrated it into a UI-based tool enabling accessibility for verbally impaired users.

TechStack: *Python, MatplotLib, Sklearn, NLP, Deep Learning, HTML5, CSS3, Bootstrap, Flask.*