Dhaivat Patel

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Experience

Amazon Ads **July 2023 – Current**

Software Development Engineer - Campaign Management Platform

- Architected Java-based backend services for global campaign booking, managing high-throughput traffic at **200+ TPS** with a focus on high availability and data consistency.
- Engineered a guardrailed, LLM-powered triage agent handling **600 tickets/day** to automate on-call investigations; automated daily queue reporting to slash active backlog by **50%** (∼180 to 90) and reduce average resolution time from 2 weeks to 3 days.
- Architected an end-to-end shadow testing framework using **AWS SNS, SQS, S3, and Lambda** to validate backend migrations, and engineered an AI-driven consistency-analysis bot to automatically triage discrepancies between live and storage logs, successfully identifying **243 critical bugs** pre-launch.
- Built a distributed caching layer for high-availability campaign metadata, reducing infrastructure costs by **25%** and optimizing system reliability across 4 internal platforms.
- Optimized call patterns to downstream systems via request batching, achieving a **96.25% reduction in volume** and improving overall system reliability and response times.
- Led cross-functional alignment to implement **AuthN/AuthZ** data gating protocols, and authored **Claude-optimized technical blueprints** that increased overall team development velocity by **40%**.

Invidi Technologies **March 2023 – July 2023**

Associate Software Developer - Platform & Infrastructure *Princeton, NJ*

- Deployed scalable **Dropwizard/Java** microservices within Kubernetes clusters to power addressable advertising flows for Connected TV (CTV) environments.
- Implemented secure authentication logic and full-stack observability via **Datadog**, building dashboards to monitor campaign booking traffic and latency metrics.
- Refined service architecture for 34 legacy ad services, achieving a **30% operational cost reduction** while ensuring smooth production operation for measurement-focused features.

Amazon Ads **May 2022 – August 2022**

Software Development Engineer Intern - Ad Identity

- Engineered memory-efficient **Bloom filters** in Java for real-time user data ingestion, reducing cache query volume by 80% to support precise ad-targeting execution.
- Utilized Java's Spring-bean framework and **Reentrant Locks** to ensure thread-safe concurrency during high-frequency audience measurement and updates.

Projects

SQL-Unified Data Abstraction Layer | *Java, Python, MongoDB, AWS* **GitHub**

- Engineered a query engine providing a **unified SQL interface** for disparate data sources including Redshift, MySQL, and MongoDB.
- Developed translation logic to bridge NoSQL and Relational syntax, enabling complex cross-platform data processing for large-scale measurement sets.

Character Animation Engine | *Unity3D, C#, WebGL* **GitHub**

- Developed a WebGL-based engine utilizing automated pathfinding and blend trees for realistic movement in complex environments.

Technical Skills

Languages: Java, Go, Rust, Python, SQL (PostgreSQL), C++, C#, JavaScript, Scala (Proficient)
Cloud & Data: AWS (ECS, Lambda, S3, SNS, SQS), Kubernetes, Docker, Kafka, Spark, Redshift, MongoDB
Core Competencies: Distributed Systems, API Design (OpenAPI), Observability (Datadog), AI Prompt Engineering
Frameworks: Spring Boot, Dropwizard, Unity3D, ReactJS, Flask, REST, JUnit/Mockito

Education

Rutgers University **Jan 2021 – Dec 2022**

Master of Science in Computer Science *New Brunswick, NJ*