Vatsal Agrawal

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Education

Indian Institute of Technology Delhi — New Delhi, India
Master of Technology in Computer Science and Engineering; ***GPA: 9.125*** — *July 2021 – July 2023*
GATE CSE AIR: 157

Skills

Languages: Python, C, Java, Node.Js, Go, SQL, NoSQL
Frameworks: Redis, Kafka, Flask, Gradle, YOLO, JPA
Systems: AWS, Azure, Kubernetes, Docker, VmWare
Tools: TeamCity, Harness, Jenkins, Copilot, Terraform

Experience

AppDynamics — Bengaluru, India
Software Engineer - Project Lead — *Jan. 2025 – Present*

- **Renewals Support**: Led **3** engineers across 2 time zones, to drive **4 multi-million-dollar** renewals by adding feature of OpenTelemetry ingestion, Authn/Authz and OpenShift support in the K8 VM Cluster.
- **Data Migration**: Engineered a TB-scale MySQL migration microservice for virtual appliance distributed system, retiring monolithic legacy systems and cutting infra costs by **18%**.
- **Reliability**: Reduced VM image size by **36%** and resolved **42%** of customer-reported defects by optimizing packaging of OS, AppD, and infra services with observability pipelines.

Software Engineer — *July 2023 – Jan. 2025*

- **Snapshot Ingestion**: Scaled distributed tracing throughput **5x (40K → 200K spans/min)** and cut **latency 14%** by migrating from stateful to stateless Kafka/Redis architecture with trace-ID partitioning and real-time cache invalidation through Spring Batch Poller.
- **Usage-Based Billing**: Developed Kafka-driven Flask services with HA TimeScaleDB enabling scalable monetization of OTel span/trace data.
- **Cloud Agnostic**: Consolidated serverless and cloud-native deployments into K8 microservices, cutting redundant codebases and infra costs **24%** via unified APIs and self-managed Kafka, Nginx and MySql.
- **Unified Cloud-SDK**: Designed Cloud-SDK Libraries for Python, Node, and Java, standardizing APIs across AWS and Azure; enabling frictionless migration between cloud and on-prem systems.
- **CI/CD**: Reduced AWS Dev-Cloud costs by **12%** by creating a localstack-based Terragrunt test framework and accelerated build cycles **70%** by parallelizing VM image creation.

Achievements & Projects

- **Recognitions:**
  - Earned multiple internal awards at AppDynamics for critical on-time deliveries and cross-time-zone leadership.
  - Awarded **Outstanding Teaching Assistant** at IIT Delhi.
- **Industry Deployment:** Deployed a production-ready React + Flask system at AIIMS Delhi for diabetic retinopathy trial, streamlining patient data capture, fundus image uploads, and disease progression tracking for hundreds of patients
- **Research Publications:**
  - Published **NetraDeep (ACM'24)**, a hybrid YOLO + image processing model for retinal HE segmentation, achieving **93.3%** accuracy on **limited** labeled/unlabeled datasets.
  - Authored **NetraVeins (Scitepress'24)**, a hierarchical retinal vessel tree classification and ordering algorithm with MATLAB, OpenCV, UNet, and GAN models, achieving **90%+** accuracy.
- **Top Academic Projects**: Haskell lexer/parser (1st of 158), C thread library (4th of 98), NLP-based cipher breaker (9th of 211)