Aashish Kumar

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Education

Indian Institute of Technology Kharagpur   **Jun 2018 – May 2023**
Dual Degree (B.Tech & M.Tech), CGPA: 8.52/10   *Kharagpur*

Technical Skills

Programming Languages: C++, Java, Golang, Python, JavaScript, TypeScript

Markup/Query Languages: HTML5, CSS3, T-SQL, pgSQL

Frameworks & ORMs: Spring Boot, Gin, Express.js, Flask, jOOQ, Mongoose, Prisma, Gorm

Libraries: React.js, Jest, Joi, SuperTest, Colly, Playwright, BullMQ, Standard Template Library

Databases: Redis, MongoDB, DynamoDB, Elasticsearch, SQLite, SQL Server, PostgreSQL, pgvector

Deployment: Docker, GitHub Actions, Azure Build & Release Pipelines, Deployment Groups, IIS, Nginx, Last9

Cloud: AWS S3, EC2, ECS, ELB, Lambda, RDS, ElastiCache, CloudWatch, SNS, SQS, SES, IAM, Route53

Experience

FlashMonk   **Dec 2024 - Present**
Software Development Engineer   *Bangalore*

- Redesigned the IMAP service, improving wait times by 16% through event–based mail fetch execution, auto–retry mechanisms, and configurable domains.
- Improved the email compose experience flow, reducing errors by 30%, and migrated mail view APIs from a database to Elasticsearch, which reduced mailbox latency by 25%.
- Migrated to an Affiliate Campaign and reward system, including campaign execution, audience segmentation, and click–through analytics, reducing customer engagement costs by 80%.
- Developed a Collections Data Ingestion Service, Collections Dimension Service, and a Collections Central Go Orchestrator, utilizing a Vector DB, ELSER, ES Mappings, and Product/Brand Semantic Search.
- Migrated 40 microservices from CloudWatch to Last9 with OTEL, achieving a 30% reduction in costs, right–sized ES/RDS clusters, dropped a 300M index, and decommissioned 2 redundant RDS instances and 1 EFS.
- Re–engineered email info nested partitions, deleted 3 billion promotional email records from S3 and the database, and migrated Mime RDS to S3, resulting in a 30% reduction in RDS costs.
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RootQuotient   **Jun 2023 - Nov 2024**
Software Development Engineer   *Chennai*

- Created Data Service APIs to migrate a Cancer Registry System, from Oracle PL/SQL Stored Procedures & Triggers to TS, leveraging SQL Server & Prisma
- Migrated .NET Web Services by creating a streaming RPC client & SOAP API server with WSDL, in Node.js, which consumes DLLs via wrappers using FFI
- Scheduled cron job for consuming HL7 documents, with transactional locks, and a configurable job interval, scaled to Node.js cluster threads through IPC
- Wrote unit & integration test suites, with a statement & branch coverage of 85%, optimized on–premise infra requirements with Grafana's K6 perf tests
- Configured build pipeline with coverage reporter & static code analyzer, and release pipeline with Azure agents, deploying in Windows servers with IIS

Amazon   **May 2022 – Jul 2022**
Software Development Engineer Intern   *Bangalore*

- Designed a UUID for the CGS Dashboard versioning and improved cadence support from weekly to every second, in the Consolidation EMR's ETL job
- Revamped the Audit Log DynamoDB to store all the metadata for the CGS Dashboard, tracking the published versions, reflecting in the CGS Version UI
- CGS UI: Enhanced with filters, publish time, and the EMR status display
- Reengineered the CSV View & Diff modules to render the dashboard directly from S3, eliminating the cost of maintaining the Quarterly Competitor DDB
- Implemented a CSV diff algorithm to compare the dashboard versions by the given primary index, providing a compact list of changes to the stakeholders

Projects

Jira 2.0 | *Autonomous Project Management Suite* | View System Design   **Apr 2024 – Jun 2024**
- Crafted a **Lambda**, which triggers upon FRD upload to **S3**, and creates user stories using **Llama3** running in an **EC2**
- Facilitated **Event Bridge** to consume Slack messages, leveraged LLMs through **Flask** APIs to compile updates on tasks
- Employed **SES** to dispatch task approvals to stakeholders, then invoked issue tracker APIs to reflect changes in backlog

DeployX | *UI Deployment Automation* | Design Reference   **Jan 2024 – Mar 2024**
- Built an API server with **RDS**, queuing build jobs and streaming logs to **Kafka** for **ClickHouse**, accessible via polling
- Provisioned an **ECS** cluster which runs **ECR** images in **Fargate**, to process the build jobs and dump the artifacts to **S3**
- Developed a **reverse proxy** for UI builds, streaming assets from **S3**, mapping subdomains to S3 keys using RDS query

Aranpani | *Fundraiser Management System* | OpenAPI Docs   **Nov 2023 – Dec 2023**
- Modeled project, donor & payment endpoints, with JWT auth, serializer, Joi validation middleware layers, adopted S3 pre–signed URLs for media uploads
- Penned UTs for models & controllers and acceptance test suites for the API endpoints, maintaining a 90% above code coverage, with Jest and SuperTest
- Ensured application's reliability with MongoDB Replica Sets, in PM2 cluster mode with APM, leveraging Nginx as a web server and Route53 name server

Coursework & Certifications

- Programming & Data Structures
- Algorithms 1
- Applied Algorithms and DS
- Probability and Statistics

- Data Analytics
- Machine Learning Foundations
- Deep Learning Foundations
- Winter School of AI & Robotics

- AlgoExpert | algoexpert.io
- FrontendExpert | algoexpert.io
- SystemsExpert | algoexpert.io
- InfraExpert | algoexpert.io