Ashish Agarwal

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Summary

Software Engineer with 5 years experience in distributed systems, cloud infrastructure, and scalable backend development.

Skills

Languages: Java, Scala, Python, Node.js, Typescript
Cloud Platforms: AWS (EKS, DynamoDB, S3, Athena, Kinesis, VPC, EC2, Cloudwatch), GCP (BigQuery, Looker)
Infrastructure: Kubernetes, Docker, Helm, AWS CDK
Data & ML: Kafka, ElasticSearch, Redis, PostgreSQL, MongoDB, VectorDBs, Langchain, LLM fine-tuning
Frameworks/Tools: Spring Boot, Spark, GraphQL, gRPC, CI/CD, Control-M, Web Development

Experience

PayPal, Software Engineer, San Jose, US **July 2024 – Present**

- Integrated on-prem infrastructure with AWS to enable **PGP** encryption/decryption, boosting data protection across **20+** systems.
- Provisioned **Kubernetes clusters using AWS CDK** with integrated access to **S3 and DynamoDB**, enabling scalable deployments and eliminating manual setup processes.
- Engineered a **developer tool** for searching **Control-M jobs** by parameters, cutting support overhead by **50%** and identifying undocumented jobs in batch-heavy projects.
- Devised a solution to **automate vendor transaction responses**, eliminating manual reconciliation, lowering accounting workload by **40%**, and increasing operational efficiency.
- Built a **Spark** job on GCP to process **25M+** profiles daily and surface insights via **BigQuery and Looker**, reducing analyst effort.

Zomentum, Software Engineer, Bangalore, IN **Sep 2021 – May 2022**

- Architected **event-driven** integrations for **CRM and ticketing** systems using **Scala** and the **Play framework**, syncing data across **8,000+** customers reliably.
- Automated **purchase order tracking** using **WebSockets**, **AWS Lambda**, and **Kinesis**, reducing manual checks by **50%** and improving user experience.
- Owned and deployed a **two-way sync** feature for **Autotask** integration, increasing auto-sync adoption from **10%** to **90%**, streamlining customer workflows.
- Reduced data duplication and improved batch job accuracy by implementing a dynamic **deduplication solution** using Java **Reflection** and a **hashing solution**, ensuring data integrity and scalability for future integrations.
- Resolved customer-reported issues via root cause analysis, driving a **70%** drop in open bugs and a **25%** rise in customer satisfaction.

JP Morgan Chase & Co., Software Engineer, Bangalore, IN **Jul 2018 – Sep 2021**

- Designed and operated a distributed **ElasticSearch indexing** system that reduced search latency from **11s to 1s** across millions of records.
- Developed robust **REST and GraphQL APIs** using **Java** and **Spring Boot**, powering real-time **contact and banker lookup**, reducing data retrieval time by **70%**.
- Delivered a **Kafka-based data pipeline** to support near real-time employee and customer data distribution across internal systems, ensuring consistency and fault tolerance.
- Modernized frontend architecture by migrating from **Flux to Redux**, reducing bugs by **40%** and optimizing state management.
- Spearheaded development of **4+** production-grade **React applications**, integrating **Redux**, **Axios**, **CI/CD pipelines**, and automated testing frameworks.
- Proposed and implemented **architectural improvements**, accelerating development velocity by **30%** and fostering technical growth.
- Led **12+ production releases**, ensuring stability through automated testing, stakeholder alignment, and strict **Agile** practices.

Projects

WeHeal | LLM, Langchain, Vector database, Python, Node.js, React | GitHub

- Built an AI-powered companion to summarize clinical notes, manage therapy context, and generate suggested responses in real-time.

Distributed Hash Table | Node.js, gRPC, EC2 | GitHub

- Engineered a distributed key-value store using consistent hashing and the Chord protocol, enabling efficient lookup and fault tolerance.

Publications

- *Kalpayita: A Machine Learning Approach to Interior Designing, Paper*, IJSRD (2018)

Education

M.S., Computer Science, San Jose State University, San Jose, US Aug 2022 - May 2024
Coursework: Distributed Systems, Advanced Algorithms, ML, Cloud Computing *GPA: 3.95/4.00*

B.E., Computer Science, Dayananda Sagar College of Engineering, Bangalore, IN Aug 2014 - June 2018