

Vaibhav Agrawal

📞 +91-8208381262 | ✉️ vagrawal047@gmail.com | 🔗 linkedin.com/in/vaibhav-agrawal-48723714a |
🐙 github.com/vaibhu04 | 📄 [geeksforgeeks.org/user/vaibhav_agr](https://www.geeksforgeeks.org/user/vaibhav_agr)

Summary

SDE II with 5+ years specializing in large-scale, low-latency search and backend systems, shipping features to **millions of customers**. Strong in distributed systems, search & relevance, and system design, with a track record of leading high-impact projects on Tier-1 services — from design and experimentation to production — and driving complex, ambiguous problems across teams to reliable, high-scale solutions.

Skills

Languages: Java, Scala, Python, PySpark, TypeScript, Kotlin, SQL, C++

Systems & Search: Distributed Systems, System Design, Search & Information Retrieval, Scalability, Low-Latency (Tier-1) Systems, Caching, Sharding

Cloud & Data: AWS (Lambda, DynamoDB, S3, EC2, SQS/SNS, ElastiCache, CloudWatch, CDK), Elasticsearch, OpenSearch, Apache Spark, Airflow

Practices: REST APIs, A/B Testing, CI/CD, Observability, On-Call / Incident Response, Spring Boot, Google Guice, Docker

Work Experience

Amazon Music, Bangalore

Oct 2022 - Present

Software Development Engineer II

- Drove a worldwide Instant Search relevance improvement project that lifted suggestion success rate **+84 bps**, cut time-to-success 134 ms, and moved 10% of plays earlier in the customer journey funnel (+517K projected annual play days) — re-engineered feedback-driven (query-click) ranking to surface more suggestions without regressing quality, doubling suggestions shown from 3 to 6, validated through offline analysis and A/B testing.
- Architected and built a new OpenSearch 2.x library search provider that established albums and artists as **first-class, independently searchable entities** — replacing a legacy model that inferred them from track data, blocked like/follow, and degraded search accuracy. Delivered the ability for customers to like and follow albums and artists directly for the first time, and cut latency ~70% on a Tier-1 path serving voice (Alexa), search, and browse use cases.
- Led the initiative to make Amazon Music's Tier-1 search service profile-aware. Unlimited family accounts support up to 6 profiles, yet every profile received identical, non-personalized results — even for their own library and generated playlists. Integrated profile context end-to-end across the search stack, delivering per-profile personalized and curated results — impacting the search experience for **88M customers across 4.1M Family-plan accounts**.
- Owned the end-to-end delivery (backend, Android, iOS) of **Gen-AI ingresses in Instant Search suggestions**, making Amazon Music's AI-generated search pages easy to discover and explore as customers type — launched for artist queries, then extended to GEMA (Genre/Era/Mood/Activity) queries; reaching millions of customers across multiple marketplaces with backward-compatible client handling that kept legacy clients working.
- Played a key role in engineering a **new Tier-1 music-search suggestion service from scratch** — cut over live production traffic with zero downtime, scaled it to **~129.6M transactions/day**, and now own its production operations with zero Sev-1 incidents since launch.
- Drove technical direction across the **full search stack** — data/search pipelines, Elasticsearch cluster infrastructure, and both core platform and experience search services; designed complex Elasticsearch query plans and the High-Confidence Index, led cross-team decisions, and mentored engineers on distributed-systems design and operational excellence.

Majid Al Futtaim (Carrefour), Gurgaon

Jan 2021 - Sep 2022

Software Development Engineer I

- Backend engineer in the Personalization Squad, owning the Rich Relevance recommendation integration **across 13 countries** — built and scaled backend search and personalization services powering product recommendations for a major e-commerce platform. Node.js, MongoDB, REST APIs, Microservices.
- Contributed to **new personalized widgets** (e.g., “frequently bought”, history-based recommendations) that improved product discovery and lifted average purchase value across the shopping experience.

Education

National Institute of Technology, Jamshedpur

2017 - 2021

CGPA: 8.13/10

B.Tech (Honours) in Computer Science and Engineering

Achievements

- **Excellence Award** — peer recognition for exceptional contributions to search quality at Amazon Music.
- **AIR 9260 in JEE Mains 2017** (among 1.2M candidates nationwide).