Mohan Kumar

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New Delhi, India

SKILLS

- **Languages & Web:** Java, JavaScript, Python, C++, HTML, CSS, React 18, Vite
- **Frameworks & Architecture:** Spring Boot, Spring Security, Multi-threading, Distributed Systems, Object-Oriented Design (OOD), Data Structures and Algorithms
- **Cloud & DevOps:** AWS (EC2, ALB, S3, Secrets Manager), Amazon DCV, Jenkins, Airflow, Git, Unit Testing, Web Workers API
- **Databases & Messaging:** MySQL, PostgreSQL, MariaDB, MongoDB, Redis, ActiveMQ, ClickHouse, InfluxDB
- **Observability & Tools:** Grafana, Telegraf, RESTful Web Services, JSON

PROFESSIONAL EXPERIENCE

Mathisys   New Delhi, India
Software Developer   Jan 2024 – Present

- Architected and deployed Pragya and Chitra, high-performance observability pipelines utilizing Grafana, InfluxDB, ClickHouse, PostgreSQL, and Telegraf to ingest 1.6 million rows per second of live data and generate comprehensive trade insights in under 1 second.
- Engineered a low-latency, real-time alerting system to detect strategy crashes and connector anomalies, dispatching notifications via Zoom and email within 1 minute of production incidents; optimized execution to maintain a clean CPU cache and run with minimal resource constraints to ensure zero interference with critical trading processes.
- Developed data pipelines using Airflow with edge workers directly inside the exchange to process 500+ GB of daily post-trade data for context generation, reconciliation, and actionable insights.
- Created a custom parser script allowing internal teams to define Airflow DAGs via simple YAML configurations, abstracting complex Python logic and imports to accelerate deployment for non-technical users.
- Built comprehensive broker dashboards enabling clients to monitor active portfolios, open/cancelled orders, and PnL, alongside audit controls for taking critical actions like canceling orders and setting instrument limits.
- Integrated Amazon DCV for secure, virtual codebase access, implementing cost-saving automated lifecycle management that dynamically provisions user sessions on request and shuts down instances/sessions inactive for over 30 minutes.
- Designed Anumati, a centralized access management application regulating user permissions across servers, trading strategies, and dashboards, and implemented authentication wrappers for open-source tools like XWiki and Taskboard.

Samsung R&D Institute Delhi (SRID)   Noida, U.P., India
Software Engineer   May 2022 – Dec 2023

- Took ownership of critical MagicInfo modules, including Web-Author, Layout Editor, and Auth server for both on-premise and cloud environments.
- Optimized backend APIs leveraging Java, Spring Boot, MyBatis, MySQL, and AWS (S3, SQS, Secrets Manager), resulting in a substantial 60% reduction in system response time.
- Refactored legacy codebase and optimized data querying logic for tens of thousands of devices, slashing the loading time of comprehensive device info and schedules from over 10 minutes to under 3 minutes.
- Developed Proof of Concepts (POCs), including a chatbot designed to summarize Salesforce comments and recommend solutions for recurring market issues.

- Streamlined continuous integration and deployment (CI/CD) pipelines utilizing Jenkins, significantly enhancing development efficiency and project delivery.

Orange Business Services   Gurugram, India
Software Engineer   June 2021 – April 2022
- Facilitated online payment integrations for prominent market participants using Orange Money.
- Spearheaded the migration and feature enhancement of multiple critical system add-ons and plugins.
- Generated global reporting data and developed diverse technical reports utilizing Python, Java, MariaDB, and Spring.

PROJECTS

CodeArena | *React 18, Web Workers, Monaco Editor, Vite, JavaScript*   2026
- Designed and built a serverless, browser-based JavaScript coding platform featuring 20 algorithmic challenges across 10 data structure categories.
- Engineered a secure, in-browser code execution engine utilizing the Web Workers API for sandboxed evaluation, effectively isolating user code from the main thread to ensure safe execution.
- Implemented robust Time Limit Exceeded (TLE) detection to automatically catch and safely terminate infinite loops without freezing the browser or requiring backend computing resources.
- Integrated the Monaco Editor to provide a professional-grade coding experience with syntax highlighting and auto-completion, and developed an auto-discovering problem registry leveraging Vite.

EDUCATION

Netaji Subhas Institute of Technology (NSIT)   New Delhi, India
B.E. Computer Engineering   Aug 2017 – July 2021

AWARDS & ACHIEVEMENTS

- **Google Foobar:** Successfully completed Level 5 of Google's Foobar Challenge (May 2023).
- **Samsung SWC Professional:** Achieved the Professional Level in Samsung's Software Competency certification (Sept 2022).