

KAMAL KUMAR SHA

Senior Full Stack Engineer | Tech Lead
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SUMMARY

Senior engineer with 6+ years shipping systems that people actually depend on daily. Currently tech lead on SentryRide, the platform the New York City Department of Education uses to get students to school, where I own the Spring Boot system of record and the Express service that assigns drivers to trips against Google Route Optimization. Before that, built a securitization engine for Piramal that chews through loan pools of 100,000+ accounts and produces the cashflow waterfalls and investor reports a deal closes on. Java and Spring Boot on one side, Node, NestJS and Next.js on the other, Postgres and Mongo underneath, all of it on AWS.

TECHNICAL SKILLS

Languages: Java 21, TypeScript, JavaScript (ES6+), SQL

Backend: Spring Boot, Spring Data JPA, Hibernate, NestJS, Express.js, Node.js, Prisma, REST, GraphQL, JWT and OAuth2, Flyway, batch schedulers and background jobs

Frontend: React.js, Next.js (App Router, SSR and ISR), React Query, Tailwind CSS, Chakra UI, Vue.js, Quasar, map rendering with Google Maps

Databases: PostgreSQL, MongoDB, MySQL, Redis, indexing and query tuning, aggregation pipelines

Cloud and DevOps: AWS (EC2, ECS, S3, RDS, Lambda, CloudWatch), Docker, Kubernetes, GitHub Actions, blue and green deploys, Nginx

Integrations: Google Route Optimization API, Google Distance Matrix, Stripe, Auth0, Twilio, third-party marketplace APIs

Data and Reporting: Apache POI, Excel output automation, high-volume file ingestion, validation and reconciliation, audit trails

Ways of Working: Agile and Scrum, code review, JUnit, Jest, React Testing Library, service boundary design, observability with ELK and New Relic

EXPERIENCE

Senior Full Stack Developer and Tech Lead

Jun 2022 - Present

Ataloud Technologies, Mumbai (Remote)

- Tech lead across two client platforms: SentryRide for the NYC Department of Education and a loan securitization engine for Piramal. Both are covered in detail below.
- Pick the stack per service instead of forcing one runtime everywhere. Spring Boot and Java 21 hold the transactional core, Express and NestJS handle optimization and the passenger app, Next.js drives the operations console.
- Moved the heaviest list and map screens onto Next.js SSR and ISR and trimmed the client bundle, which took first paint on the dispatch view down by about a third.
- Replaced a manual release process with GitHub Actions into AWS ECS using blue and green rollout. Deploys went from an evening someone had to babysit to a 12 minute pipeline.
- Review code for a squad of six and mentor five juniors, mostly on writing tests that fail for the right reason and reading production logs before guessing.

Senior Full Stack Engineer

Nov 2021 - Jun 2022

Applere Technologies, Noida (On-site)

- Shipped React and Next.js frontends on Node.js services for NuralSales, JK Connect, JK Total Control, JK MSFA, MyDA, InsideLogs and Kapoor Kitchens.
- Built a shared component library and design tokens that four product teams adopted. A standard screen went from roughly three days of work to under two.
- Containerised services with Docker, deployed them to AWS, and put Redis in front of feeds that were hitting MongoDB on every single request.

Full Stack Engineer

Jan 2021 - Oct 2021

Applere Technologies, Noida (On-site)

- Wrote REST APIs in Node.js and Express with MongoDB plus the React frontends against them, across retail and field sales clients.
- Took over CI/CD for two products and got releases off developer laptops and into pipelines.

MERN Stack Developer

Jan 2019 - Dec 2020

Forwardcode Techstudio, Delhi (Remote)

- Built React and Node.js applications with Socket.IO real-time modules backed by MongoDB.
- Added Jest and React Testing Library coverage to the two modules that broke most often, cutting repeat regressions by about 25%.

PROJECTS

SentryRide Student Transportation, NYC Department of Education

Stack: Java 21, Spring Boot, PostgreSQL, Node.js, Express, MongoDB, NestJS, Prisma, Next.js, React, Docker, AWS

- Tens of thousands of students, many with special education or medical needs, have to be picked up from a stop near home, put on a bus with the right driver, vehicle and bus aide, and delivered to school on time. SentryRide runs that operation and keeps a record of who boarded which bus and whether they arrived.
- Four runnable apps. I lead the design across all of them and write the Java and Node services myself.
- **core-service, Spring Boot and Java 21 on PostgreSQL:** system of record for people, schools, zones, routes, stops, trips, inspections, incidents, approvals and audit. Encodes the eligibility rules the DOE has to defend, such as distance from school and which zone a student falls in, so entitlement to transport can be proved on paper.
- **routing-service, Express on MongoDB:** the optimization engine. Wraps the Google Route Optimization API to decide which driver drives which trip, in a tiered overnight batch and again during the day as a continuous reroute that fills idle driver gaps with unassigned work.
- **web-portal, Next.js and React:** the DOE staff console. Onboarding students, drawing service zones on a map, building routes, running live dispatch and approving route changes.
- **passenger-service, NestJS and Prisma on PostgreSQL:** a separate product for paratransit and non-emergency medical transport. Backend for the passenger mobile app, built as a thin write-through mirror over an external NEMT marketplace that stays the real source of truth for those trips.
- Kept optimization and NEMT out of the transactional core so nothing writes to the audit trail sideways. That is what makes compliance reporting and contractor billing hold up when someone asks who drove which run.

Securitization Platform Piramal

Stack: Java, Spring Boot, PostgreSQL, Node.js, React, Apache POI, AWS, scheduled batch jobs

- **Portfolio segmentation and analysis:** slice underlying loan portfolios by geography, ticket size, borrower profile, seasoning and delinquency status, so a pool can be cut and compared before anyone prices the deal.
- **Cashflow modelling and waterfall structuring:** model expected cashflows per pool and structure the repayment waterfall, with the contractual and regulatory constraints enforced in the model rather than checked afterwards.
- **Bulk data processing and validation:** ingest loan-level data at 10,000 to 100,000+ accounts per pool with automated validation, error detection and reconciliation. Bad rows get flagged and quarantined instead of failing the whole run.
- **Excel and reporting automation:** generate deal-specific Excel outputs, MIS reports and investor-ready summaries with live formulas and formatting, replacing workbooks that used to be assembled by hand.
- **Integration and scale:** API surface into the internal loan management, accounting and reporting platforms, with scheduled batch runs and an audit trail on every artefact a deal produces.

EDUCATION

Master of Computer Applications, Artificial Intelligence, Shobhit University

Jan 2026 - Jan 2028

Bachelor of Computer Applications, IGNOU, Delhi

2019 - 2022

Diploma in Computer Engineering, Guru Nanak Dev Institute of Technology

Aug 2018 - Jul 2020

Intermediate, Higher Studies, Kendriya Vidyalaya

2016 - 2017

CERTIFICATIONS AND AWARDS

- AWS Certified Cloud Practitioner, valid Mar 2023 to Mar 2026
- Performer of the Quarter, Ataloud Technologies, Oct 2022
- Hackathon participant, iNeuron and NativeBase, Jul 2022