

Hritwik Agarwal

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Full-Stack Engineer with 5+ years building configuration-driven, event-driven systems across fintech and e-commerce. Experience spanning Java Spring Boot, React, TypeScript, AWS, OpenShift, and distributed architectures. Solo founder of DBFlow (collaborative database SaaS) and Divine Learning (cross-platform AI + Vedic astrology app). AWS Certified Developer & Solutions Architect.

EXPERIENCE

Full-Stack Engineer — Markets Post-Trade | Barclays Bank Plc, Pune

Oct 2022 – Present

- **Configuration Server (Java Spring Boot, greenfield):** Designed and built a multi-tenant UI configuration microservice from scratch — application owners define toolbar, AG Grid, and stepper form configs through an admin UI; configs persist to SQL Server with full versioning, rollback, and editor audit trail. Deployed on OpenShift via GitLab CI/CD.
- **Recursive Nested Config Engine:** Engineered a self-referential config resolution model where each record carries component type, render metadata, field validations, and a chain pointer to the next nested config — enabling zero-redeployment UI changes across all downstream trading applications.
- **React Component Library (active contributor):** Contributing to the internal Shadcn + AG Grid component library used across Barclays Markets Post-Trade — custom grid wrappers, stepper forms, and toolbar builders consumed by multiple live trading applications.
- **Cards & Loans Platform (112K+ customers, €26.9M+ payments):** Led React/Zustand frontend revamp on AWS ECS, improving LCP/FCP by **30%**. Scaled backend test coverage to **80%+** (JUnit, Mockito) and UI to **90%+** (Jest, Karma). Reduced sprint cycle time by **25%** through reusable component libraries and standardised API contracts.
- **Design System & Accessibility:** Built standardised, accessible design-system components (CSS, Storybook, responsive layouts), reducing UI defects by **40%**, improving responsiveness by **60%**, and accelerating feature roll-out speed by **20–30%**.
- **Headless CMS Migration:** Transformed Adobe AEM-managed content into reusable React Native components, reducing rewriting overhead by **80%** and significantly improving long-term maintainability.
- **API Analytics Pipeline:** Engineered a Jenkins + Node.js pipeline replacing manual reporting with dynamic Chart.js dashboards for real-time API performance insights — reducing manual intervention by **100%**.
- **Stack:** Java Spring Boot · SQL Server · OpenShift · GitLab CI/CD · React · Shadcn · AG Grid · AWS ECS · JUnit/Mockito · Jest/Karma

Full-Stack Engineer | Techmonk Ecom Solutions, Mumbai

May 2022 – Oct 2022

- **Visual No-Code Builder Suite (Next.js + NestJS + MongoDB):** Architected five drag-and-drop builders — Workflow, Website, Template, Form, and Pipeline. Every design serialises as a JSON schema persisted to MongoDB; schemas reconstruct full UI state on fetch, including component trees, layout, validations, and nested component relationships.
- **Event-Driven Workflow Execution (SQS + Lambda):** Designed the workflow execution engine where each DnD step-node supports if/else and switch branching configured through UI. Execution payloads pushed to **AWS SQS**, consumed by designated **Lambda functions** per processor type — enabling async, parallel step processing decoupled from the main server.
- **Loyalty & Rewards Engine:** Built a customer loyalty system on NestJS — **1 point per ₹4 spent**, with automatic tier promotion (**Bronze 25K · Silver 50K · Gold 100K pts**). Points accrued transactionally on purchase events; full ledger history in MongoDB for audit and redemption.
- **S3 Media Pipeline + Auth:** Pre-signed URL upload flow (browser → S3 direct, no server bandwidth cost). Passport.js + JWT auth with RBAC across all builder APIs. AWS Comprehend sentiment scoring on reviews, cutting moderation effort by **60%**.
- **Serverless Migration:** Re-architected monolith to Lambda + API Gateway + Redis, reducing monthly infra cost by **20% (₹12K → ₹9.6K)**.
- **Stack:** Next.js · NestJS · MongoDB · AWS SQS · Lambda · S3 · Passport/JWT · Comprehend · CodePipeline

Software Engineer | Cppgemini, Navi Mumbai

Dec 2020 – May 2022

- **Dynamics 365 Migration Tool:** Node.js Azure Function + React UI for Excel-to-Dynamics 365 ingestion with intelligent entity mapping, eliminating manual errors across **10,000+ records**.
- **Agricultural Data Portal:** Vanilla JS + Power Automate portal automating post-submission processing, reducing manual data-handling time by **40%**.

FOUNDER PROJECTS

DBFlow · canvadb.com — Collaborative Database Management SaaS · Solo Founder Jul 2025 – Present

- **Built a multi-user database canvas platform supporting MongoDB, PostgreSQL, MySQL, MSSQL, and DynamoDB** — users design schemas visually, run cross-database migrations, and query via an AI sidebar backed by the Claude API.
- **Real-time collaboration:** Implemented Yjs CRDT-based conflict-free collaboration for concurrent canvas editing.
- **Pipeline execution engine:** BullMQ + Redis distributed job queue for async DB-to-DB transfers with retries and WebSocket progress streaming.
- **Compliance audit logs:** Immutable event trail via MongoDB + S3 Object Lock (WORM) targeting fintech and regulated industry buyers.
- **Pricing:** Free tier (1 DB connection, 20 AI query assists, watermarked export, read-only share URL) · Custom enterprise plan (unlimited connections, custom pipelines, SSO/SAML, on-premise deployment, dedicated support & SLA).
- **Stack:** Next.js 14 · NestJS · React Flow · Zustand · Yjs · BullMQ · Redis · MongoDB Atlas · AWS ECS · Claude API

Divine Learning — Cross-Platform Devotional App (React Native/Expo) · Solo Engineer Jul 2025 – Present

- **Shipped a full-stack devotional platform — NestJS REST API, MongoDB, JWT auth, React Native app — solo, end to end.**
- **AI shloka engine:** Mood selector triggers an LLM (Ollama/OpenAI-compatible) to return a contextually matched Bhagavad Gita verse with Sanskrit TTS recitation in **10 languages** (English, Hindi, Bengali, Marathi, Gujarati, Odia, Tamil, Telugu, Kannada, Malayalam).
- **Vedic astrology engine:** Real-time Panchang (Tithi, Nakshatra, Yoga, Rahu Kaal, Muhurat) computed client-side from VedAstro API. Kundli generation and 36-point Guna Milan compatibility via concurrent Promise.all API calls.
- **Japa Mala counter:** Debounced 5-second batch sync to API with race-condition guard (ref-based) preventing queued tap overrides on chant-switch resets. Guest-to-account data migration on sign-up.
- **Content pipeline:** Cheerio + Axios scraper for sacred texts (Aartis, Chalisas, Bhajans, Mantras) upserted to MongoDB. NestJS cron for daily push notifications to users who haven't chanted.
- **Stack:** React Native 0.81 · Expo 54 · Expo Router 6 · NestJS · MongoDB · JWT · Reanimated 4 · react-native-maps · VedAstro API · Ollama

SKILLS

Languages: Java, TypeScript, JavaScript (ES6+)

Backend: Spring Boot, NestJS, Node.js, Microservices, REST APIs, WebSockets, BullMQ, SQS, Yjs (CRDTs), Passport/JWT, Serverless

Frontend: React.js, Next.js 14, React Native (Expo), Zustand, Tailwind CSS, Shadcn/UI, AG Grid, React Flow, Reanimated 4, Angular, Storybook

Cloud: AWS (ECS, Lambda, S3, RDS, API Gateway, SQS, CloudWatch, CodePipeline), OpenShift, Docker, GitLab CI/CD, Jenkins

Databases: SQL Server, MongoDB, PostgreSQL, MySQL, DynamoDB, Redis

AI & Integrations: Claude API, Ollama/OpenAI-compatible, AWS Comprehend, Resend, VedAstro API

Testing: JUnit, Mockito, Jest, Karma, Karate

CERTIFICATIONS

AWS Certified Developer Associate (DVA-C02) · AWS Solutions Architect Associate (SAA-C03) · Microsoft Azure Fundamentals (AZ-900)

EDUCATION

B.Tech – Computer Science | Jaipur Engineering College and Research Centre CGPA: 8.75 | 2016–2020

ADDITIONAL

Languages: English (Professional) · Hindi (Native) · Japanese (Conversational – JLPT N5)