

AYUSH SINGH

Senior Consultant · Full-Stack & AI Engineering

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SUMMARY

Full-stack engineer with **8+ years** of experience building enterprise platforms in insurance, CPaaS and cybersecurity. I lead delivery pods building **Node.js / Java Spring Boot** microservices and **React** front ends, and I build **AI agents** that make engineering teams faster: my latest tool cut UAT defect resolution time **3x**, and a team project of mine placed in the **top 15 of 150+ teams** in Thoughtworks' AI/works Global Hackathon.

KEY SKILLS

AI & Agents: LLM agent design, multi-pass / adversarial verification, human-in-the-loop workflows, tool calling, prompt engineering, RAG, code-graph indexing (tree-sitter, Kuzu), Anthropic Claude SDK, Vercel AI SDK, LangChain, CrewAI, Claude Code, Cursor, Cline

Backend: Node.js, NestJS, Java Spring Boot, Python, Restate, Netflix Conductor, Keycloak (OIDC / JWT), PostgreSQL, MongoDB, Redis, RabbitMQ, Kafka

Frontend: TypeScript, JavaScript, React, Next.js, React Hook Form, JSON Schema, AJV, Tailwind CSS, Material UI, Styled Components, Jest, React Testing Library

DevOps & Observability: Docker, Kubernetes, Helm, AWS (CDK, SDK), Grafana / Loki, distributed tracing, Ansible, shell scripting, Linux

WORK EXPERIENCE

Thoughtworks — Senior Consultant

Apr 2026 – Present

Client: HDFC Life Insurance (HLI Retail). Converted to full-time after a year on the same engagement as a Greyamp Consulting contractor.

- **Lead Developer:** Lead a cross-functional pod delivering microservices for HLI Retail, the insurance distribution platform used by HDFC Life's on-ground sales agents.
- **AI UAT Support Agent (built solo):** Designed and built a human-in-the-loop AI agent for production and UAT support. It pulls Jira defects, reads the code and git history, queries Grafana Loki logs across services, checks Helm deploy history and extracts frames from QA screen recordings, then proposes evidence-backed fixes. It edits code only after a developer approves the fix, and investigations are shared through Git so any developer can resume a ticket.
- **Impact: 3x faster** UAT defect resolution per developer per ticket and **2x lower AI cost per ticket**. Average smoke-test fix time fell from **~half a day to under 30 minutes**.
- **Thinker (with 2 colleagues):** Helped come up with the idea for an AI code-intelligence tool and built its **indexer** and **multi-pass LLM agent**. The indexer turns multi-repo codebases into a graph (tree-sitter + Kuzu) covering REST, Kafka, Spring-event and WebSocket links between services. The agent runs **draft** → **verify** → **adversarial** passes over a ticket to produce a verified, citation-backed analysis, shown in a 3D system-graph viewer. **Top 15 of 150+ teams** in the **Thoughtworks AI/works Global Hackathon**.

Greyamp Consulting — Senior Software Engineer

Jan 2022 – Mar 2026

HDFC Life Insurance (deployed to Thoughtworks)

Apr 2025 – Mar 2026

Re-architected HDFC Life's agent-facing insurance distribution platform to cut time-to-market for new products. A **JSON-schema-driven dynamic form engine** and **Restate** durable workflows let the business launch complex products through configuration instead of code.

- **Lead Developer:** Led a cross-functional pod through end-to-end delivery of scalable microservices that met enterprise architecture standards.
- **Security & Identity:** Built the authentication and authorization framework on **Keycloak**: OIDC at the API Gateway and JWT-validated service-to-service (M2M) calls with service accounts, for a zero-trust architecture.
- **Durable Workflows:** Used **Restate** to run stateful, distributed proposal journeys with **exactly-once** execution, durable logs and invocation tracking.
- **Performance & Observability:** Added multi-level **Redis / in-memory caching** for product metadata and rules, and **distributed tracing** across services so slow async journeys could be diagnosed quickly.
- **AI Schema Engine:** Built an **LLM-powered pipeline** that converts raw Excel product requirements into production JSON schemas with custom AJV validations and reflexive logic, replacing manual schema authoring.

Kotak Life Insurance

Jul 2023 – Mar 2025

- Built a configurable form-filling platform that agents use to capture customer details across insurance products, covering quote generation, KYC and payment.
- Built a **JSON-schema form builder** (React, React Hook Form, AJV) so new products could be onboarded quickly, and orchestrated product workflows with **Netflix Conductor** and **Java Spring Boot**.

Rakuten CPaaS

Jan 2022 – Jun 2023

- Built features for Rakuten's bulk SMS and voice API platform, which organisations use to send messages at scale.
- Turned Rakuten-themed Figma designs into a responsive **atomic component library** in React / TypeScript, with unit and business-flow tests in Jest and React Testing Library.
- Built **NestJS** reverse-proxy APIs that add CPaaS-specific business logic on top of Rakuten's Java microservices, working in 2-week sprints with the backend and QA teams.

Bike Bazaar & WhiteHill (part-time technical advisor)

Jan 2022 – Dec 2022

- Guided architecture and technology decisions and raised code quality across a Next.js, Express and MySQL stack, and helped the team solve complex frontend and backend problems.

Newgen Software — Senior Software Engineer

Jan 2021 – Dec 2021

- Built from scratch a React / TypeScript / Tailwind / Material UI app that integrates Newgen's **OmniDocs** document management system with **SAP** for tracking purchase orders. It shipped to the customer, who gave positive feedback.
- Delivered new features and enhancements in the OmniDocs Angular application.

Safe Security — Software Engineer L2

Jun 2018 – Dec 2020

SAFE: a platform that predicts an enterprise's risk of cyber breach by aggregating signals from its security products and threat intelligence.

- Started as a UI developer and moved to full-stack (**React, Node.js**). Shipped Active Directory and ServiceNow integrations, the Hack Simulation graph, SAFE Cyber Insurance, the Health & Wellness dashboard and the **AWS Marketplace** listing.
- Built Docker containers, serverless APIs with **AWS CDK**, and Ansible / shell deployment automation, along with D3.js / amCharts visualisations, RabbitMQ pipelines and Jest tests.
- **Quarterly Recognition Award (Q4 2019, Customer First)**: Fixed a production incident at a key customer where security assessments had stalled under load, by redesigning the **RabbitMQ** queue handling.

Earlier: UI developer intern at Safe Security (2017), where I built a 3D D3.js attack-simulation graph, and backend intern at Badiyajobs (2016), building Laravel / MySQL APIs.

EDUCATION

B.Tech, Computer Science & Engineering — Ajay Kumar Garg Engineering College

2014 – 2018

- **Star Volunteer Award**: Organised the college's first competitive-programming event with Directi (CodeChef) and later ran a second one. Member of the college's core software incubation team.