

Arkadyuti Sarkar

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Professional Summary

Associate Architect with **9+ years** of experience building AI-powered PDLC platforms, enterprise CI/CD systems, and IoT solutions. Key contributor to an **AI platform targeting 2,000+ engineers** with specialized agents and MCP integrations. Achieved **50% build time reduction** with **4x CI/CD cost savings** and scaled teams from **3 to 35+ engineers**.

Experience

Tekion

Apr 2018 – Present

Associate Architect

2025 – Present

- Key contributor to **ORBIT**, Tekion's **AI-powered PDLC platform** targeting **2,000+ engineers**, built on **DeepContext** — an enterprise knowledge engine indexing **2,000+ repositories**, thousands of Jira tickets, and Confluence docs via vector embeddings (Qdrant) and code graph (Neo4j)
- Engineered **specialized AI agents** using **Agno** and **LangGraph** powered by DeepContext: Security Agent triaging **400+ vulnerabilities** via Semgrep (automating classification previously out of scope for security team), API Compliance Agent for OpenAPI scoring, Product Agent for Epic alignment, Productboard **MCP** module, and DeepContext Slack Bot with channel-specific context sets
- Designed and implemented **OAuth 2.0 auth server** (Okta), **APISIX Edge Gateway** with session auth (Redis, silent refresh, PKCE), and 4-path authentication. Implemented **RBAC** with CASL enforcement, role hierarchy protection, audit logging, and Access Control MFE with cross-MFE authorization via Module Federation singleton pattern
- Instrumented **OpenTelemetry** across microservices to capture MCP tool calls, AI agent executions, and user activity, powering a custom **Insights dashboard** for adoption and usage analytics. Integrated **Langfuse** for per-user LLM trace attribution
- Architected **platform infrastructure on Azure AKS** with **ArgoCD-driven GitOps**. Built Jenkins CI/CD pipelines from scratch — deploy pipeline with rollout verification and per-service locking, MFE CDN pipeline with build promotion (stage to prod without rebuild). Stood up **Prometheus + Grafana** monitoring with dedicated Qdrant/Neo4j node pools
- Shipped framework-agnostic **AI Chat Widget** as Shadow DOM custom element with context-aware routing, multi-agent switching, **CopilotKit** runtime, and embedded ThoughtSpot analytics for lead data
- Led **platform stabilization**: resolved Module Federation runtime crashes, runtime CDN config for environment promotion, content-hash cache busting, and **multi-stage Docker** builds to reduce deploy time
- Providing **technical leadership** for **8-developer Frontend Studio team**, mentoring engineers and driving cross-functional collaboration on **AEC Platform** for OEM launches, reducing rollout from **6+ months to weeks**

Staff Software Engineer – Tekion

2022 – 2024

- Led **frontend CI/CD initiative** for **250+ developers**: standardized ESLint and testing via custom **Jest-based library**, achieved **50% build time reduction** with multi-stage Docker and **4x cost reduction** via build-once, promote-everywhere across 6 environments
- Developed **AEC Builder pattern framework** with **CDN-based theming** and **JSON token-driven branding**, eliminating separate codebases per OEM, adopted by **35+ developers**
- Built AEC widgets and modules for OEM pages, appointments, filters, VSR and VDP pages adopted across multiple development teams
- Built **automation ecosystem** with Jenkins, Verdaccio publishing, and Slack integrations, reducing developer publish time from **3-4 minutes to under 10 seconds** across **20+ daily publishes** per developer

- Built **Connected Displays** (Over-The-Top) IoT platform deployed across **General Motors dealerships** with RFID, OBD telemetry, and real-time Service Advisor alerts
- Designed **distributed system architecture** for unified **IoT CMS** managing displays and OBD devices using **AWS IoT, MQTT, and SQS**, handling **millions of requests** and reducing system issues by **90%**
- Developed **OBD integration** for real-time vehicle health monitoring, automated service recommendations, and repair order generation
- Implemented OTA updates and remote debugging for IoT devices, eliminating on-site visits across dealerships
- Scaled team from **3 to 35+ engineers** as core member throughout the product development lifecycle

- Built DevOps automation tools, AWS monitoring dashboards, and integrated **Dynatrace** observability across multiple Tekion systems

Sapient

Jun 2016 – Apr 2018

Interactive Developer

Bangalore, KA

- Developed **Verizon’s global homepage** during iPhone X launch and built global header component used across multiple subsidiaries
- Designed end-to-end UI flows for product display, checkout, and grid walls using **React, Preact, and JavaScript**

CropmyBill

Feb 2015 – Jun 2016

Software Engineer

Durgapur, WB

- Built full-stack web application aggregating deals for **50+ e-commerce platforms** including Flipkart, Amazon, and Myntra using PHP, MySQL, JavaScript, and jQuery

Projects**Spotify Custom Recommendation Engine** – *Node.js, Express, Spotify Web API, OAuth 2.0* – [Live](#) – [GitHub](#) **2025**

- Built **music recommendation engine** with **dual-mode system** combining user listening analysis with **LLM-enhanced discovery**, using **Spotify Web API** and **OAuth 2.0**
- Implemented algorithms for artist similarity, genre exploration, and keyword matching with diversity balancing
- Created web interface for playlist generation, profile summaries, and real-time Spotify integration

Full-Stack Portfolio CMS – *Next.js 15, TypeScript, MongoDB, MinIO, Docker* – [Live](#) – [GitHub](#) **2024**

- Built portfolio CMS with **admin dashboard, rich-text editing** (BlockNote), MongoDB, and MinIO file storage
- Implemented SSR, SEO optimization, authentication, and **containerized deployment** with Docker

Technical Skills

Architecture: System Design, Distributed Systems, Microservices, Event-Driven Architecture, API Design, Design Patterns

AI & Protocols: MCP, Agno, LangGraph, CopilotKit, RAG, Semantic Search, Vector Embeddings, OpenTelemetry, Langfuse, Flowise

Languages: JavaScript, TypeScript, Golang, Python

Frontend: React, Next.js, TypeScript, Module Federation, Redux, Tailwind CSS

Backend & Database: Node.js, NestJS, Express, PostgreSQL, MongoDB, Qdrant, Neo4j, Redis, Prisma, MQTT

Cloud & DevOps: Azure AKS, AWS, Kubernetes, ArgoCD, APISIX, Docker, Jenkins, Prometheus, Grafana, Git

Education**National Institute of Technology, Durgapur**

2012 – 2016

Bachelor of Technology in Information Technology