

SRAJAN

ACADEMIC PROFILE

Degree/Certificate	Institution	Percentage/CGPA	Year
IDD	Mechanical Engineering IIT (BHU), Varanasi	7.48	2028
CBSE (XII)	St Mary's school , Mainpuri	92.40	2022
CBSE (X)	St Mary's School , Mainpuri	91.00	2020

SKILLS

Backend & Distributed Systems Engineering

TypeScript, Go, Rust, PostgreSQL, MongoDB, Redis, GraphQL, AWS, Distributed Systems, Event-Driven Architecture, CDC, Saga Pattern, Distributed Transactions, Distributed Locking, WebSockets, OAuth 2.0, RAG, AI Agents, System Design, Library Development, High Availability, Horizontal Scaling

INTERNSHIP/TRAINING

Aerotech Private Ltd : AI-Powered SEO Automation Worker

11 April - 19 July

Designed and deployed a Go-based SEO analytics automation pipeline leveraging Google Search Console, OAuth 2.0 Desktop Application flow, AI/RAG-powered content analysis, AWS EventBridge, ECS Fargate, and backend API integrations for automated product content optimization.

- **AWS-Native SEO Automation** — Built a scheduled Go worker deployed on **AWS EventBridge + ECS Fargate** for automated SEO analytics processing.
- **Google Search Console Integration** — Implemented **OAuth 2.0 Desktop Application Flow** with persistent refresh-token authentication for secure, unattended data retrieval.
- **AI/RAG-Powered Analysis** — Developed a retrieval-augmented pipeline that analyzes search performance metrics, gathers contextual information, and identifies content optimization opportunities.
- **AI Agent Workflows** — Integrated tool-calling AI workflows with internal backend APIs to enrich product metadata, descriptions, and SEO-relevant content.
- **End-to-End Automation** — Engineered a fully automated pipeline spanning Search Console ingestion, AI-driven reasoning, recommendation generation, and content updates.

PROJECTS

CDC-Axon — Production-Grade Change Data Capture SDK in Go (6 releases)

May 2026 – Present

Go SDK that captures PostgreSQL WAL and MongoDB change streams at the wire level, relaying events to any message broker with at-least-once delivery, crash recovery, and pluggable observability. Published on Go module registry. Competing alternative to Debezium (enterprise standard) — 25x lighter, zero Kafka dependency.

- Captures PostgreSQL WAL and MongoDB Change Streams, relaying events to RabbitMQ, Kafka, SQS, and custom brokers.
- Supports crash recovery, resumable snapshots, at-least-once delivery guarantees, and Redis-backed persistence.
- Includes stateful transformation pipelines for deduplication, rate limiting, enrichment, masking, and event routing.
- Provides pluggable observability with Prometheus, Datadog, CloudWatch, Grafana, and structured logging support.
- Designed as a lightweight alternative to Debezium with zero Kafka dependency and significantly lower resource consumption.
- **GitHub:** github.com/Srajan-Sanjay-Saxena/cdc-axon

Data Avengers LMS ,Production-Grade Full-Stack Learning Management System

2024 – Present

Production-grade LMS on Turborepo monorepo with distributed systems, self-published npm libraries, and AWS-native infrastructure.

- Built using self-published libraries **zodex-axon**, **gql-axon**, **redis-axon**, and **cdc-axon**.
- Implemented CDC + Saga-based distributed transactions across PostgreSQL and MongoDB with Redis-backed deduplication.
- Designed Redis-powered infrastructure using Sentinel, Redlock, Pub/Sub, and Lua scripts for high availability and scalability.
- Developed type-safe payment processing, WebSocket communication, authentication, authorization, and security workflows.
- Architected clustered Node.js services, horizontally scalable Redis-backed WebSockets, and middleware-driven GraphQL APIs with caching and invalidation.
- Implemented enterprise security with OTP authentication, JWT refresh, RBAC, CSRF protection, device fingerprinting, and Redis rate limiting.
- Deployed on AWS using ECS Fargate, RDS, Redis, S3, CloudFront, Terraform, and Ansible.

GQL-Axon — World's First Type-Safe GraphQL Resolver Middleware Pipeline

June 2026 – Present

Engineered and published the world's first middleware chaining library for GraphQL resolvers. 432+ weekly npm downloads. MIT licensed, 49 tests, multi-export package.

- Type-safe GraphQL middleware framework built with branded types, Zod validation, and compile-time guarantees.
- Builder-pattern middleware pipeline with generic accumulation and automatic resolver type propagation.
- Advanced TypeScript type engineering for middleware classification and schema enforcement.
- Unified error handling for Zod, Prisma, and application-level exceptions.
- **npm**: npmjs.com/package/gql-axon
- **GitHub**: github.com/Srajan-Sanjay-Saxena/gql-axon

zodex-axon — World's First Compile-Time Request Verification Library for Express

June - July 2025

Built and published zodex-axon, the world's first Express middleware that makes unvalidated request access a compile-time error. Unlike traditional validation libraries that only check data at runtime, zodex-axon uses TypeScript's branded types and conditional type manipulation to completely strip raw req.body, req.params, and req.query from the type system — forcing developers through validated accessors. If you skip validation, your code simply won't compile.

- Leverages TypeScript branded types and advanced conditional type engineering to enforce validated access to request bodies, route parameters, and query parameters.
- Provides end-to-end type safety with zero runtime overhead beyond validation and is built on top of **Zod v4**.
- **npm**: npmjs.com/package/zodex-axon
- **GitHub**: github.com/Srajan-Sanjay-Saxena/zodex-axon

goRabbit-axon — Production-Ready RabbitMQ Client Library for Go

June 2025 - Present

Designed and published a production-grade RabbitMQ SDK for Go featuring connection pooling, circuit-breaker-based reconnection, publisher confirms, quorum queues, graceful shutdown, and fault-tolerant messaging abstractions for distributed systems.

- Built a production-grade RabbitMQ client for Go with connection pooling, channel lifecycle management, and self-healing reconnection.
- Implements per-connection circuit breakers, exponential backoff with jitter, automatic channel replacement, and on-reconnect recovery hooks.
- Supports publisher confirms, mandatory routing validation, quorum queues, QoS prefetch control, and graceful consumer shutdown with zero message loss.
- Provides structured logging, pluggable connection strategies, context-driven lifecycle management, and reusable infrastructure abstractions.
- Tested using real RabbitMQ containers via **testcontainers-go** with extensive integration coverage.
- **GitHub**: github.com/Srajan-Sanjay-Saxena/goRabbit-axon

HONOURS AND ACHIEVEMENTS

Turbodocx: RTL Language Support for HTML-to-DOCX Conversion

Sep 3 - October 5 , 2025

Worked as a Part-Time Software Engineer at TurboDocx, contributing to the core HTML-to-DOCX rendering engine. Implemented right-to-left (RTL) language support for Middle Eastern languages, enhanced multilingual document generation capabilities, and delivered features released in v1.15.0 that contributed to increased product adoption and ecosystem growth.

- **HTML-to-DOCX Rendering Engine** — Worked on the core document generation engine powering TurboDocx's HTML-to-DOCX conversion service.
- **RTL Language Support** — Designed and implemented support for Middle Eastern right-to-left (RTL) languages, enabling accurate text direction, alignment, and layout preservation during document generation.
- **Rendering Engine Enhancements** — Extended parsing and conversion workflows to correctly process bidirectional and multilingual content while maintaining formatting fidelity.
- **Internationalization (i18n)** — Expanded language coverage for enterprise customers generating multilingual DOCX documents from HTML templates.
- **Product Impact** — Delivered features released in **v1.15.0**, contributing to increased product adoption and approximately **6,000 additional npm downloads per week**

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