

Kaustubh Patange

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EDUCATION

Walchand Institute of Technology

Bachelor of Technology in Computer Science and Engineering; **CGPA: 8.98**

Minor Degree in Electronics and Telecommunication Engineering

Solapur, Maharashtra, India

Aug 2023 – April 2027

RELATED COURSEWORKS

- Linear Algebra
- Digital System Design
- Database Management Systems
- Scientific Computing
- Distributed Systems
- Data Structures & Algorithm

EXPERIENCE

Google Summer of Code Contributor | *JavaScript, C, Fortran, Node.js*

May 2026 – Present

[stdlib-js/stdlib - RFC](#)

- Extending Level 2 and Level 3 **BLAS** routines (real and complex precision) with JavaScript, **C**, and **Fortran** implementations for near-native numerical performance in Node.js.
- Implementing a three-layer API architecture (CBLAS-compatible interface, strided-array compute kernels, and **ndarray** wrappers) with loop unrolling and cache-friendly memory-access optimizations.

Core Contributor **stdlib-js** | *JavaScript, C, Node.js*

November 2025 – April 2026

[stdlib-js/stdlib](#) – open-source numerical computing library

- Shipped **128 merged PRs** ([Link](#)) spanning **BLAS** routines, statistical reductions, and native **C** add-ons, each with full test suites, benchmarks, and documentation.
- Designed 60+ **ndarray** API packages and numerically stable computation kernels in JavaScript and C; reviewed community PRs to enforce strict API design, testing, and documentation standards.

Software Developer | *Next.js, Express, PostgreSQL, REST APIs*

July 2025 – September 2025

[Nexentia](#)

- Engineered scalable backend services and secure **REST APIs** (Node.js, Express, PostgreSQL) for a Warehouse Management System powering inventory tracking, order processing, and fulfillment workflows.
- Designed normalized relational schemas with indexing and **ACID**-compliant transactions to guarantee stock consistency under concurrent order operations; implemented **JWT** authentication and role-based access control.

PROJECTS

CoSketch – Real-time Collaborative Whiteboard | *Next.js, TypeScript, WebSockets, PostgreSQL* [Live](#) [Code](#)

- Engineered a low-latency real-time collaboration system using persistent WebSocket connections to synchronize canvas operations across multiple concurrent users.
- Designed an event-driven canvas state architecture for drawing, shape transformations, and persistent workspace management, ensuring consistent client synchronization and scalable collaboration.

Corpora – Multimodal Agentic RAG Platform | *Next.js, LangGraph, Qdrant, PostgreSQL, Redis* [Live](#) [Code](#)

- Engineered a multi-tenant agentic RAG pipeline using LangGraph with hybrid vector search (dense + BM25, RRF fusion) and cross-encoder reranking, streaming citation-grounded answers over SSE at 31 ms p95 retrieval latency.
- Built an async ingestion and CLIP text-to-image search system with CI-gated retrieval evals (faithfulness, hit-rate), Clerk JWT multi-tenancy, and Langfuse observability, deployed on production cloud infra.

TECHNICAL SKILLS

Languages: C, C++, Java, Python, JavaScript, TypeScript, Fortran

Frameworks: ExpressJS, NodeJS, EJS, FastAPI, ReactJS, NextJS, TailwindCSS, Bootstrap

AI & ML: PyTorch, OpenCV, Langchain, LangGraph, pgvector, Pinecone, Pandas

Other: Bash, REST API, Postman, Git, Docker, AWS, Kafka, Redis, MongoDB, Supabase, Postgres, SQL

ACHIEVEMENTS & CERTIFICATIONS

LeetCode: Solved 200+ data structure and algorithm problems. ([Profile](#))

stdlib: Member of the numerical library called stdlib on GitHub.

NPTEL Online Certification: Programming with Generative AI (Aug-Oct 2025). ([Certificate](#))

Infosys Springboard: Agile Scrum Certification (May 2026). ([Certificate](#))