

# Hrithik Raj

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## EXPERIENCE

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### Full Stack Software Developer

Sepr 2022 – Present

*Tridiagonal Software Private Ltd.*

*Pune*

- Built a User-Friendly **React, Typescript, NodeJs, ExpressJs** based application for chemical mixing simulator using **Canvas & Python** for *MixIT*
- Implemented **Reprise License Manager** in NodeJs and using **Dynamic Link Libraries** and **OOP**
- Built **react-calendar-filter, footer navigation, breadcrumbs, user-Friendly drop-down Menu**, custom mesh simulation using **OpenFOAM** which utilised Pre-design modals to run job, validations and calculations using **React.memo, useMemo, and useCallback** which reduced job run time by **80%**.
- Implemented **Middlewares** for file upload and uploaded file validation using **multer**.
- Implemented About Us Page, Forms , Auth Page, CFD analysis page, Admin dashboard page, via utilising **Routing, Error Boundary, fallback** component, **Server Rendering** with **Suspense & React.lazy**
- Using **SOLID** and **Design Pattern** principles developed multiple custom hooks with higher order functions and enhance code re-usability and organization of calculations .
- Developed **Site Search, Sort, Pagination** for users and jobs based on date, time and other attributes of users, jobs, enhanced **MongoDB** queries and indexing to optimize query performance **40%**.
- Implemented **OAuth** and **JWT** for authentication, enhanced security with tokens,session management with licensing cookies, and sessions, also extended refresh and access tokens,
- Implemented **Singleton instance control pattern** using **Web Sockets** and **Socket.io**
- Configured MongoDB **replica set** to prevent single-point failures, ensuring data availability and resilience.

### Sparks Foundation

June 2022 - Aug 2022

*Internship*

*Online*

- Developed finance management system for Spark Foundations and added various calculations.
- Worked with HTML, CSS, JavaScript, Cloud Security, AWS

### Fame World Educational Hub

Feb 2022 - Apr 2022

*Internship*

*Online*

- Developed User Login/ Signup, Mobile OTP, Shipping Option various feature in e-commerce website.
- Developed Payment Gateway Integration, Feedback system(with review and rating).
- Worked with HTML5, CSS, JavaScript, Java

## PROJECTS

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### Property Listing Hub | [LINK](#)

Aug 2023 – Dec 2023

- A **React, Node js, Typescript, Tailwind** based open source alternative to **OLX** providing features like listing buying and selling of property
- Developed a full-stack web application using with **Express** serving a **REST API** with **React** as the front-end
- Providing faster page loads using lazy loading, Proper bundling, state management using **React-Redux**, google Firebase Authentication with custom Auth feature.
- Integrated Redis for fast cache management and handling asynchronous tasks

### Online Canvas | [LINK](#)

Sep 2023 – Nov 2023

- Developed a **React, Next.js, Typescript, MongoDB, Express, Sockets** **real-time** drawing clone of **Excalidraw** which enables enabling **multi-tab** drawing.
- Managed state with **Socket contexts** and **Toolkit Context** .
- used useLayoutEffect hooks to calculate position before painting and optimized UI with draggable toolbox/paintbox & **PNG** download feature for canvas drawings

## Job Portal | [LINK](#)

Nov 2023 – Jan 2024

- Developed a **React, Next.js Clerk, Typescript, Prisma, Postgresql** Job Apply and listing app using server actions in React server components (via form action), Built Admin dashboard protected by **Clerk** authentication. **React Hook Form & Zod** validation.
- **useFormState** and **useFormStatus**, handled errors in server actions with useFormState
- Vercel **Blob** Storage and Vercel **Postgres** together with Prisma ORM (text search & pagination)
- Done **Caching** & dynamic metadata, generate **Metadata** & generate **Static** Params

## ACHIEVEMENTS

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### Gladiator Award for outstanding performance | [LINK](#)

Pune, Maharashtra

*Tridiagonal Software Private Ltd.*

*1 March 2024*

- For the exceptional work on the **Web License Manager Project**.
- Our team implemented RLM License manager in **Node js and express Js**.
- This was one of the major break through as script directly validate and initiate RLM license server through Node js script which increase performance and decreased the loading time by **90%**.
- This was challenging as RLM doesnt provide javascript support but we did it using **ffi-napi, ref-napi** and other brain storming pointer manipulation which replicated c/C++ pointer in node js

## EDUCATION

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### Sinhgad Institute of Technology and Science (**CGPA: 9.2**)

Pune, Maharashtra

*Bachelor of Engineering in Computer Science with a major in Cyber Security*

*May 2019 – May 2023*

### St. Michaels High School (**percentage: 93%**)

Patna, Bihar

*CBSE 12th Boards with subjects **Physics, Chemistry, Maths, IP***

*May 2017 – May 2019*

## TECHNICAL SKILLS

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**Languages:** JavaScript, Typescript, Python, SQL, NoSql, , HTML/CSS, Java

**Frameworks:** Next js , Node.js, Shadcn UI, Material-UI

**Developer Tools:** Git, VS Code, Visual Studio, React Dev Tool, Prisma ORM

**Libraries:** React, express js

**Database:** MongoDB, PostgreSQL, GraphQL, Google Firebase

**Authentication:** Stripe, BrainTree, OAUTH 2.0, Clerk, Next Auth

**Certifications:** Python, Java, C/C++ **LINK**