

# Mrigank Sagar

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*Experienced Full-Stack Software Engineer.*

## Experience

 **Full-stack Software Engineer**  
OPTUM (UHG)

2021 - Present  
Gurugram, India

- **Role and project:**
  - Key contributor of a comprehensive *fitness and health-care* platform that integrates gym memberships, vendor shopping, and events.
  - Developed an *operations and management* platform designed to streamline onboarding and management of insurance clients and partners. This directly improved project's operations and empowered customer service teams with tools to efficiently resolve members' issues.
- **Backend development:**
  - Leveraged Scala with Play Framework, Cats-Effects, and Quill to create highly concurrent, and scalable backend applications, resulting in quick response times even while sustaining higher loads.
  - Built microservices while harnessing SpringBoot with Java to expose REST, and Nest.js to expose GraphQL APIs to the Frontend application while ensuring minimum overhead and seamless integration across the system.
  - Leveraged PostgreSQL as the database and Kafka as the message broker to ensure reliable data flow and real-time communication across distributed microservices.
- **UI and frontend development:**
  - Developed adaptive and responsive frontend Applications with React.js and Next.js, while leveraging Redux for complex state management.
  - Spearheaded the rebranding of the UI to a modern and attractive UI, resulting in a 30% increase in user retention.
  - Implemented server-side rendering with Next.js to improve loading time, early interactivity and search engine optimisation (SEO).
  - Additionally, developed a cross-platform mobile application for the Onepass product using React Native.
- **Engineering support:** Resolved critical bugs related to payment processing and members' eligibility, hence significantly improving reliability of system and contributing to increased customer retention.

Scala Java Spring Play JavaScript TypeScript React.js Next.js React-Native Postgres Docker

## Education



**B.Tech in Computer Engineering**  
DELHI TECHNOLOGICAL UNIVERSITY

2017 - 2021  
Delhi, India

- CGPA: 8.0 out of 10.0.
- Relevant Coursework: Data Structures, Algorithms, Object Oriented Programming, Database Management Systems, Operating Systems Design, Computer Networks, Compiler Design, Distributed Systems.
- Lab Internship: Simulated computer networks with Mininet and studied its load with varying network congestion to develop optimised routing tables for Software Defined Networks (SDN).
- Major Project: Published a proof of concept to develop softwares using ontologies as a means to document entity relationships and maintain the software system.



**12th Grade Senior Secondary, (Science)**  
RAJKIYA PRATIBHA VIKAS VIDYALAYA (C.B.S.E)

2016-2017  
Delhi, India

- Achieved 92.2 percent marks (class rank 3 out of 105).
- Graduated from one of the highly reputed grammar schools in Delhi.
- Awarded excellence award from the Chief Minister of Delhi.

## Projects

**Torrent Downloader**  
DESIGNER/DEVELOPER

2023 - 2024

- Developed a torrent client as a static site to directly download torrents only using the browser without the need for backend processing, downloaders or additional installations.
- Leveraged the React library and Vite build tool and server to create a seamless application with Webtorrent.js to power the torrent client.
- Utilised ShadCn and Tanstack UI libraries with Tailwind to craft a high performing, responsive and visually appealing user interface.

## Publications

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Rohit Beniwal, Mrigank Sagar. *Ontology Driven Software Development for Better Understanding and Maintenance of Software System*. Springer, 2021, pp. 73–81.

## Awards and Achievements

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- Awarded certificate of excellence for perfect CGPA from the Education Minister of India.
- Qualified for JEE mains and JEE advanced, among the top 1% of millions of applicants nationwide, and secured admission eligibility for prestigious Indian Institute of Technology (IITs).
- Awarded medal by Chief Minister of Delhi for exceptional performance by public school students in JEE exams.
- Awarded scholarship by Delhi government to fully sponsor tuition classes by VMC for JEE preparation.

## Activities and Interests

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- Volunteered to visit children in orphanages and teach lessons in Science and Maths.
- Volunteered to visit slums and mentored children to build life essential skills and self-confidence while understanding them.
- My hobbies and interests include playing Chess, Guitar, English literature, and listening to Music.

## Skills

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<b>Programming languages</b>	Scala, Java, JavaScript, TypeScript, C++, C, Python
<b>Frontend</b>	React.js, Next.js, React Native, Redux, HTML/CSS, Tailwind
<b>Backend</b>	Play, SpringBoot, Nest.js, PostgreSQL, REST APIs, GraphQL
<b>Scala tech-stack</b>	Play, Cats, Cats-Effects, Zio, Akka actor system, Akka / reactive streams, Slick, Quill
<b>Tools &amp; platforms</b>	Git, Docker, Kubernetes, Linux
<b>Languages</b>	English, Hindi, German, Sanskrit