



Shubham Nagota

| **Sr. Software Engineer - BYJUs, India**

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Calendar Invite: [Calendly Link](#)

Tags: **Strong Backend Skills, Strong Frontend Skills**

I am a MERN stack developer with 5+ years of experience currently acting as a key team member in designing the post-sales user experience at BYJUs.

My most notable achievement was designing and implementing a microservices architecture for a monolithic application, which led to a remarkable 70% reduction in application downtime and a 40% increase in performance.

Further, I have created a real-time event processing system using Kafka, which significantly reduced processing time by 60% and enabled the application to handle 3x more concurrent orders.



Top Skills

JavaScript

5 Years of Experience

I've used it in the front-end with React JS, Redux and Next JS, in the backend for APIs with Node and Express JS and for testing automation using Mocha and Chai.

Created escalation management system which helped BYJUs in handling social media escalations and reducing TAT from 1 day to 4 hours.

Extensively used React charts to show analytics of the SKUs being ordered to do future predictions and planning for Belk enterprise having 250+ stores.

Node JS

5 Years of Experience

I have successfully built scalable APIs using MongoDB for a user base of 20M+ and also ensured robust security by implementing helmet to protect the system from potential vulnerabilities.

Created student microservice using Nodejs having low latency, highly available and handled large number of concurrent connections to the system for BYJUs catering to 150M+ users.

Implemented TDD approach using Mocha and Chai libraries to catch more errors at development time which reduced production error rate by 50%.

Stack Experience

Languages: JavaScript, Python

Frontend Libraries & Frameworks: React JS, Redux, React Native

Backend Libraries & Frameworks: Node JS, Express JS

Databases: MongoDB, PostgreSQL

Testing: Mocha, Chai

Tooling: Kafka, IronMQ

Cloud: AWS, Firebase, Netlify

Thoughts

What's the hardest problem you've solved?

Due to the increasing number of students joining BYJUs, the monolithic application faced scalability challenges that could not be resolved with its existing architecture.

To overcome this hurdle, we implemented a solution that involved breaking down the application into separate microservices for orders and students and introduced an event

processing system to better manage asynchronous systems.

We used Node JS, ECS, and Confluent Kafka to achieve this, resulting in a significant improvement in the application's performance.

After implementing these changes, the application's performance improved by 40% and the number of concurrent orders the app can handle increased by 3x.

What are you most excited to work on for the next couple of years?

As a software engineer, I am always eager to explore and employ innovative technologies and tools to improve the efficiency, scalability, and performance of software systems.

Moving forward, I am especially fascinated by emerging technologies like Blockchain and serverless computing. Also, I wish to expand my knowledge across different domains, such as healthcare and fintech, and tackling challenging problems in other fields as well.

Furthermore, I am also eager to delve into other backend technologies like Go, Rust, and Haskell besides Node JS.

Professional Experience

Sep '16 - Present

BYJUs, Bangalore (India) - Sr. Software Engineer

Jan '20 - Present · 37 Months

BYJU'S is a global ed-tech company, providing highly adaptive, engaging, and effective learning solutions to more than 150 million students around the world.

Tech Stack: Node JS, Express JS, React, MongoDB, AWS, Kafka, Redis

- Led a team of 4 members and helped in mentoring by taking sessions, newsletters and article sharing which helped in a faster team growth.
- Analyzed the under utilized resources on AWS, which resulted in cost optimization securing USD 110K+ in monthly savings
- Reduced the production incident by 70% by implementing APM monitoring and alerting tools by using Datadog, Prometheus and Kibana

- Implemented microservices architecture using JavaScript on server and client resulting in increased performance by 40%

Impact Analytics, Bangalore (India) - Software Engineer

Jun '19 - Jan '20 · 6 Months

Impact Analytics builds 360-degree AI powered retail automation products to empower enterprises to automate their complex workflows and help them turn their data into insights.

Tech Stack: Node JS, Express JS, React JS, MongoDB, GCP, Python

- Refactored the existing application and improved the structure by creating modules & reusable components using functional components and hooks ecosystem
 - Reduced the development time for any application by 30%
- Implemented OOPs concepts on the backend service which resulted in removing code duplication and clean code practices by 2x
- Added command palette in applications for support team which reduced navigation time for the applications by 30%

General Electric, Bangalore (India) - Software Engineer

Oct '18 - Jun '19 · 9 Months

General Electric provides software & IIoT (Industrial Internet of Things) services to industrial companies, helping industries work better. Operates in aviation, power, renewable energy, digital industry, additive manufacturing and venture capital and finance.

Tech Stack: Node JS, Express JS, React JS, PostgreSQL, Sequelize

- Collaborated with the external teams to develop OKRs for a team of 50+ people, for our product and delivered on those guidelines
- Enhanced the existing fire-line product to support features like handling unique data, removing dependencies & maintaining data consistency that increased product reliability by 30%
- Introduced Sequelize ORM that allowed developers to work with the database using objects & methods, rather than writing raw SQL queries and decreased the learning

time by 20%

Motorola Solutions, Bangalore (India) - Software Engineer

Oct '17 - Sept '18 · 12 Months

Motorola Solutions is a global leader in public safety and enterprise security that deals with Appliances, Electrical, and Electronics Manufacturing.

Tech Stack: Python, Node JS, Express JS, MySQL, Docker

- Wrote Python scripts for handling a large amount of CSV data to process and generate SQL statements for data manipulation which reduced the man hours by 30%
- Containerized applications using Docker which helped in building, shipping and running applications across cloud platforms
 - Increased the application availability by 99% using auto-restarts
- Built automations for Docker deployments which reduced the process time by 20%