

# SURAJ MISHRA

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## Education

### Northeastern University, Master's degree in Computer Science

Relevant Courses: Web development, Program Design Paradigm, Mobile Application Development, NLP

Boston, Massachusetts  
Sep 2023 - Dec 2025

### SRM Institute of Science and Technology, Bachelor's degree in Computer Science

Relevant Courses: Data structures and algorithms, Artificial Intelligence, Object Oriented Programming, DBMS

India

Jul 2019 - Jun 2023

## Skills

### Programming Languages: Java, Python, JavaScript, TypeScript, C++, SQL

Frontend: React, HTML/CSS, Redux, Next.js, Material UI, Responsive Design, jQuery

Backend: Node.js, Express.js, RESTful APIs, GraphQL, JSON

Databases: MySQL, PostgreSQL, MongoDB, Redis, Database Design

Tools & Technologies: Git, AWS, Visual Studio Code, Eclipse, JIRA, Postman

Core Competencies: Full-Stack Development, Problem Solving, Debugging, Testing, Code Review, Agile/Scrum

## Work Experience

### IpserLab LLC

Boston, MA, USA

#### Software Engineer Intern

Jan 2025 - Jun 2025

- Revamped quiz creation platform by implementing customizable templates and multimedia support using **React** and modern UI principles.
- Accelerated API response times by **30%** through backend optimizations using **Java** and **PostgreSQL** for efficient data retrieval.
- Implemented **real-time analytics dashboard** with performance tracking, leaderboard features, and data visualization capabilities.
- Restructured database schema and query optimization, **reducing execution time by 25%** while leveraging full-stack development skills.
- Enhanced frontend accessibility and **cross-platform compatibility** through collaboration with UI/UX teams.

### Northeastern University

Boston, MA, USA

#### Graduate Teaching Assistant, Web Development

Jun 2024 - Dec 2024

- Facilitated student learning through structured tutorials on **Full-Stack Technologies** (React, Node.js, Express, MongoDB).
- Mentored students with personalized assistance and **comprehensive code reviews** throughout the semester.
- Streamlined course operations and communication channels while applying **Agile methodologies** to manage student workflows.

### Internship Studio

Remote, IN

#### Web-development Intern

Jan 2022 - Mar 2022

- Boosted website performance through **responsive design** implementation using **JavaScript** and CSS across multiple platforms
- Optimized server performance for **e-commerce platform**, improving response times during peak traffic periods
- Integrated **MySQL database** for product catalog management with secure authentication and transaction processing.

## Projects

### Image Processing & Enhancement Application

Sept 2024 - Dec 2024

- Built a **comprehensive image processing application** in Java that allows users to apply filters and transformations to images.
- Implemented **advanced features** including blur, sharpen, sepia, grayscale, and color correction algorithms.
- Applied **design patterns** (Adapter, Facade, Builder, Command, Strategy) to improve code maintainability and extensibility.
- Engineered **multi-threaded processing system** for handling concurrent image transformations across multiple file formats.
- Optimized **kernel convolution algorithms** from  $O(n^2m^2)$  to  $O(n^2m)$  using separable filters, achieving 3x faster processing.
- Implemented **undo/redo functionality** with command history stack supporting up to 50 operations for non-destructive editing.

### Kanbas React Web Application

Jan 2024 - Apr 2024

- Created a **learning management system** similar to Canvas where students can access courses, assignments, and grades.
- Built responsive platform using **React** with component-based architecture and modern state management.
- Reduced build time by **40%** through modular design and efficient code splitting techniques.
- Designed **RESTful backend APIs** with **Node.js** and Express for seamless data flow and user authentication.

### ECOM-VISION Admin Dashboard

Jan 2024 - Mar 2024

- Developed an **administrative dashboard** for e-commerce analytics featuring sales tracking, inventory management, and user insights.
- Created interactive **data visualization** components using Material UI and Nivo Charts for business analytics.
- Optimized application state management using **Redux Toolkit** for improved performance and user experience.
- Improved data processing efficiency by **30%** with **Node.js** and **MongoDB** aggregation pipelines.