

Rachit Gupta

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Education

Rutgers University - New Brunswick

Sep 2022 - May 2026

Bachelor of Science in Computer Science

GPA: 3.83

- **Coursework:** Data Structures, Algorithms, Principles of Information and Data Management, Computer Architecture, Systems Programming, Intro to Artificial Intelligence, Principles of Programming Languages, Linear Algebra

Experiences

Software Engineering Intern

Jun 2024 - Aug 2024

Octaura

New York City, NY

- Developed a Java Spring Boot admin-level microservice with a RESTful API to manage over 200 client traders' permissions (entitlements) and authorization levels across the Octaura loan trading platform
- Implemented a write-through Redis cache to store client trader entitlements during active sessions, ensuring data consistency with a PostgreSQL database and reducing query latency by 23%
- Built a grid-based React.js interface for the entitlements microservice, enabling platform teams to efficiently authorize clients in production while reducing manual backend updates
- Achieved 93% test coverage across 30+ test cases using JUnit and Mockito, validating data integrity, API reliability, and critical business logic

Undergraduate Teaching Assistant

Jun 2023 - May 2024

Rutgers University

New Brunswick, NJ

- Conducted 60 recitations for over 120 students in a Calculus II course with 1500+ total enrollees, providing targeted assistance that improved student engagement and understanding
- Authored detailed solutions for 50+ multi-page problem sheets, resulting in a 80% reduction in grading time for instructors
- Facilitated active group discussions, boosting course comprehension by 30% according to end-of-course surveys

Ethitech Development Team

Mar 2023 - May 2023

Ethitech @ Rutgers University

New Brunswick, NJ

- Collaborated with 5 students to create the Ethitech club website for 300+ current and prospective members to learn more about the club and when meetings will take place
- Integrated a MongoDB database for event storage, enabling real-time updates and improving data reliability for the club's event calendar.
- Implemented an event calendar for the home page proposed by the UI team using React.js, boosting club attendance by 33%

Projects

SpeedChat | *Java Spring Boot, Redis Cache, Redis Pub/Sub, Kafka, PostgreSQL, Docker, React.js*

Jan 2025

- Developed a microservices-based real-time chat platform using Java Spring Boot, designed to support 1000+ concurrent users with secure OTP-based authentication and chatroom management
- Optimized message delivery with a Redis Pub/Sub architecture, enabling low-latency broadcasting across horizontally scaled WebSocket nodes
- Built a Kafka-driven batch processing service with PostgreSQL, efficiently persisting chat messages from a Kafka pipeline for reliable storage and high-throughput data handling

Moodify | *Java Spring Boot, Python, Flask, MySQL, TensorFlow, React.js*

Aug 2024

- Created a Flask API to classify user emotions from short journal entries using LSTM neural networks trained on 500k+ sentences, achieving 94% testing accuracy
- Integrated OAuth 2.0 and Spotify API in a Spring Boot RESTful service to dynamically recommend personalized playlists based on real-time emotion analysis for users
- Designed and managed a MySQL database to track users' journal entries and playlists, enabling data-driven insights into mood patterns and music preferences across 4+ time intervals for testing and analysis

PathVisual | *React.js*

Mar 2023

- Deployed an interactive pathfinding and maze visualization tool, implementing algorithms like Dijkstra's, DFS, and BFS with an average pathfinding time of 4 seconds on a 20x40 grid
- Incorporated recursive division for maze generation, enhancing algorithm testing scenarios by increasing path variability

Skills

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

Technologies and Frameworks: Spring Boot, PostgreSQL, Redis, Kafka, Docker, Flask, MongoDB, Git, TensorFlow, Postman, Websockets, React.js, Next.js

Concepts: RESTful APIs, Microservices, Event-Driven Systems, API Design, Caching, Pub/Sub, Load Balancing, Unit Testing