

# Rohit Roy

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## EDUCATION

### University of Chittagong

Bachelor of Science in Computer Science; CGPA: 3.71/4.00

Chittagong, Bangladesh

Jan 2020 – Oct 2025

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## EXPERIENCE

### Autolinium | Full Stack Developer (Contract) (n8n, Python, React.js) (Oct 2025 – Dec 2025)

- Engineered automated long-form video(2hrs+) pipeline using n8n, FFmpeg, ElevenLabs, and GPT-4o with checkpoint persistence, reducing compute costs by **70%** on failures.
- Built and deployed compliance validation system for ship recycling industry using document processing and RAG, reducing document validation from **3+ days to minutes**.
- Built responsive interfaces with React.js of a POS system for a retail showroom for inventory and sales processing.

### Learnathon 3.0, Geeky Solutions | Software Engineering Trainee(Remote) (Jan 2025 – May 2025)

- Architected microservices file-sharing system with Spring Boot (API gateway, user/file services, config server, Eureka discovery) and centralized configuration management.
- Designed hierarchical permission system with inherited access controls (owner/editor/viewer) using PostgreSQL.
- Developed shared library providing standardized DTOs, entity templates, validation annotations, and event schemas across microservices.
- Implemented OAuth 2.0 and JWT authentication with automatic token refresh (15-minute expiry) at API gateway.
- Established CI pipeline with GitHub Actions and SonarCloud, achieving **80%** code coverage through **140+** tests.

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## OPEN SOURCE CONTRIBUTIONS

- Checkstyle** (Java) – Automated formatting validation across **164** test files, reducing manual review overhead.
- Zen Audio Player** (JavaScript) – Modernized dependency management by migrating from Bower to CDN delivery and fixed Puppeteer test setup.

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## TECHNICAL SKILLS

**Languages:** Java, JavaScript, SQL

**Frameworks & Libraries:** Spring Boot, React.js

**Databases:** PostgreSQL

**Security & Auth:** OAuth 2.0, JWT

**DevOps & Tools:** Git, Docker, GitHub Actions, n8n

**Problem Solving:** 500+ DSA problems (LeetCode, CodeForces, VJudge)

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## ACHIEVEMENTS

- Top 5** finish among 20+ Java teams in Geeky Solutions' Learnathon 3.0 (Jan–May 2025).
- Champion**, Intra-Department Project Showcasing & SQL Contest, University of Chittagong (August 2023).
- 6th place, Engineering Day Programming Contest, University of Chittagong (Apr 2022).

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## PROJECTS

### HTTPForge | (Java, HTTP/1.1)

 *GitHub*

- Designed and implemented three HTTP/1.1 server architectures (single-threaded, thread-per-request, thread-pool) to analyze concurrency trade-offs under load.
- Achieved **151% higher throughput** (3,181 vs 1,267 req/s) with a bounded thread pool compared to unbounded threading at 1000 concurrent connections.
- Reduced memory usage by **84%** (160 MB vs 1 GB) by introducing a dynamically scaling thread pool (16–160 threads).
- Performed systematic load testing across six concurrency levels, evaluating p50/p90/p95/p99 latency percentiles.

### IntelliCS | (Java, Spring Boot, Next.js, TypeScript, PostgreSQL)

 *GitHub*

- Built and deployed a full-stack intelligent tutoring system with Spring Boot (Render), Next.js (Vercel), and PostgreSQL with a layered architecture.
- Implemented weighted Bayesian knowledge tracing to estimate real-time concept mastery.
- Built a recommendation engine prioritizing questions and lessons by mastery gaps, prerequisites, and recency.
- Added request deduplication using in-memory caching to filter redundant user interactions.