

# SUBHANKAR ROY

(Backend Engineer / DevOps Engineer / Cloud Infrastructure Engineer)

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## SUMMARY

Results-driven backend & cloud engineer with hands-on experience building a Java/Spring Boot + React full-stack government portal and optimizing ML workloads across CPUs/GPUs. Reduced registration errors by up to **70%** and improved API response time **~30–40%** through database pooling, caching, and containerization. Seeking an entry-level Backend/DevOps role to scale reliable, secure systems on AWS and Docker/Kubernetes.

## EDUCATION

### NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY Nirjuli, Arunachal Pradesh

Bachelor of Technology

Jun 2021 – Jul 2026

Major in Computer Science and Engineering

Cumulative CGPA: 6.50/10

Relevant Coursework: Software Engineering; Operating Systems; Algorithms; Artificial Intelligence, Computer Networks.

## WORK EXPERIENCE

### NATIONAL INFORMATICS CENTRE.

Agartala, Tripura

Software Engineering Intern

Jun 2025 – Jul 2025

- Built a Java 17 / Spring Boot backend and React + TypeScript frontend for the state tax portal used by many users, cutting citizen registration time from **days to 30 minutes**.
- Increased successful online registrations **+40%** and lowered data submission errors **-60%** by adding multi-step UI, real-time validation (Zod), and OTP-based verification.
- Built the backend using **Spring Boot (Java 17+)** and **PostgreSQL**, providing robust **RESTful APIs** for seamless communication between the client and server.
- Improved API latency **~30%** via DB connection pooling and static asset caching; reduced developer onboarding from **4 hrs → <60 mins** using Docker-based dev/workflows.
- Implemented CSRF protections and input validation that removed many critical security findings in the project's internal security testing.

### TRIPURA UNIVERSITY.

Agartala, Tripura

AI Computation Research Intern

Jun 2023 – July 2023

- Configured GPU/CPU environments (CUDA, Metal, Linux) and benchmarked KNN, RF, GBM, CNNs across 4 hardware setups; identified a CPU/GPU combo with **4x** training speed.
- Reduced training time **2.5x** for image recognition tasks by moving workloads to GPUs and optimizing batch/configuration settings.
- **Reduced model training time** by over 2.5x by leveraging GPU acceleration for image recognition tasks, demonstrating significant performance gains over CPU-based computation.
- **Quantified the ML performance** of 5 different processors, revealing one's **4x speed advantage** in model training and another's **35% superiority** in computer vision inference.

### F13 TECHNOLOGIES.

New Delhi, Delhi

AWS Cloud Trainee

Sep 2021 – Jan 2022

- Completed hands-on AWS training; familiar with EC2, S3, IAM and fundamentals of VPC and Lambda.

## PROJECTS

### PROFESSIONAL TAX PORTAL([Github](#))

Jun 2025 – Jul 2025

- **Architected** a full-stack tax portal for the Tripura State government, digitizing a manual process to cut citizen registration time from **days to under 10 minutes**.
- **Reduced** data submission errors by **70%** by engineering a responsive multi-step UI with TypeScript and Zod for real-time validation.
- **Engineered** secure backend RESTful APIs with Spring Boot and Java 17+, managing user data, session information, and database interactions efficiently.
- **Slashed** deployment time from **hours to minutes** and ensured **100% environment consistency** by containerizing the entire stack with Docker.

- **Improved** API response times by ~40% under load through backend optimizations like database connection pooling.

## CERTIFICATIONS

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- AWS Cloud Practitioner Essentials ([Drive](#))
- AWS Partner: Cloud Economics Essentials ([Credly](#))
- AWS Partner: Accreditation (Business) ([Credly](#))
- AWS Partner: Technical Accredited ([Credly](#))

## TECHNICAL SKILLS

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- **Languages:** Python, C/C++, Java, SQL, Bash.
- **Frameworks:** Spring Boot, React, RESTful APIs (REST).
- **Databases:** PostgreSQL, MySQL.
- **Tools/DevOps:** Git, Docker, Jenkins, CI/CD, VS Code.
- **Cloud:** AWS (EC2, S3, VPC, IAM, Lambda).
- **Networking/OS:** TCP/IP, DNS, Routing (OSPF/BGP), Linux.

## ACTIVITIES

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### MODEL UNITED NATIONS (SHRISTI),NERIST

Nirjuli, Arunachal Pradesh

Head of IT

April 2025

- **Coordinated** all IT operations for the online registration process for the Model United Nations (MUN) Shristi event.
- **Directed** the collection and organization of registration data for all event participants, ensuring accuracy and confidentiality.
- **Resolved** over 50 technical support inquiries from event attendees via email, achieving a 95% satisfaction rate and ensuring a smooth registration experience for all participants.