

# Aditya Tiwari

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## Summary

Software Engineer proficient in Java, Golang, Spring Boot, and microservices, with hands-on experience building scalable, distributed systems. Skilled in Docker, Kubernetes, and cloud platforms (AWS/Azure), with strong expertise in SQL (PostgreSQL) and NoSQL (MongoDB) databases for delivering robust backend solutions.

## Technical Skills

**Programming:** Java, Golang, Python, Algorithms & Data Structures  
**Backend:** Spring Boot, Microservices, RESTful APIs, Unit Testing, PostgreSQL, MongoDB, JWT  
**DevOps & Cloud:** Docker, Kubernetes, AWS (EC2, EKS, S3, IAM, VPC), Azure, Git, CI/CD  
**Messaging & Monitoring:** Kafka, RabbitMQ, Prometheus, Grafana  
**Security:** JWT, AES, RBAC, OAuth2

## Experience

**Research Intern, IIITDM Kancheepuram** (*Advisor: Dr. Gowthaman Swaminathan, Jan 2025 – May 2025*)

[GitHub](#) [🔗](#)

- Built a distributed AI training platform using **Spring Boot** and microservices to accelerate CNN training for thermal conductivity prediction of Boron Nitride composites.
- Used **Kafka** for task distribution, cutting training time by **40%** (e.g., 60 to 36 mins for 122 MB datasets).
- Integrated **Deeplearning4j** for parallel training across 3+ nodes, achieving **95%** accuracy within  $\pm 0.05$  W/mK.
- Deployed **Dockerized MongoDB** and **AWS EKS**, scaling to **10x** larger datasets (e.g., 1.2 GB).

## Projects

**Secure Notes Management System**

[GitHub](#) [🔗](#)

- Designed a secure notes system with **AES encryption** and **Role-Based Access Control (RBAC)**, ensuring robust security.
- Enhanced system security with **JWT authentication** and deployed via **Docker** for streamlined development and deployment.

**AI-Powered Email Assistant Extension**

[GitHub](#) [🔗](#)

- Built an AI email assistant using **Spring Boot** and **Google Gemini** for personalized replies.
- Cut response time by **30%** via AI-powered suggestions and automation.
- Integrated a browser extension, boosting productivity by **40%**.

**Decentralized File Storage System**

[GitHub](#) [🔗](#)

- Developed a P2P file storage system in **Golang**, eliminating central server dependency.
- Boosted data efficiency by **40%** via custom encoding/decoding.
- Secured files with **AES encryption** and **RBAC**, improving security by **60%**.
- Enhanced network performance by **35%** with advanced buffering and error handling.

## Certifications

**Goldman Sachs Software Engineering Virtual Experience** – Assessed **MD5** vulnerabilities, demonstrated attacks with **Hashcat**, and proposed **bcrypt/Argon2**, **MFA**, and security best practices.

## Education

**Bachelor's Degree in Mechanical Engineering**  
**Indian Institute of Information Technology Kancheepuram**

Expected Graduation: 2025