

# 4-Week Full-Stack API + AI Dev Roadmap

This roadmap is designed for high-intensity execution, focusing on backend API development with AI integration. It requires 5-6 hours per day (weekdays) and 8+ hours on weekends. The goal is to develop a strong API project, integrate AI, and secure an internship in one month.

## Week 1: Backend API Mastery (Java + Spring Boot)

- Learn Spring Boot fundamentals and CRUD operations.
- Integrate database (MySQL/PostgreSQL) with JPA and Hibernate.
- Focus on API design, controllers, and service layers.

End of Week Goal: CRUD API with Spring Boot and database.

## Week 2: API Scaling + AI Integration Start

- Implement authentication using JWT and role-based access.
- Optimize SQL queries and indexing for performance.
- Begin integrating AI (OpenAI API, LangChain, NLP basics).

End of Week Goal: Secure API + Small AI-powered API.

## Week 3: Full AI API Project + Networking

- Build a full AI-powered backend API project.
- Learn Docker and deploy APIs to AWS.
- Start cold outreach and build a strong LinkedIn presence.

End of Week Goal: AI-powered Resume Screener API + Start networking.

## Week 4: Finalizing Project + Applications

- Deploy project with proper documentation.
- Focus on testing, debugging, and scalability improvements.
- Apply to at least 30+ internships and continue networking.

End of Week Goal: Fully deployed project + Internship applications.

## Daily Schedule

- 1 hour: DSA Practice (Leetcode, Codeforces)

- 1 hour: Java & Backend API learning
- 2 hours: Hands-on API development & AI integration
- 2 hours: Networking, Resume Building, Cold Outreach (Week 3 & 4)

## **Resources**

- Spring Boot Crash Course: [youtube.com/watch?v=9SGDpanrc8U](https://youtube.com/watch?v=9SGDpanrc8U)
- Java Brains (Spring Boot & API Development): [youtube.com/@JavaBrainsChannel](https://youtube.com/@JavaBrainsChannel)
- SQL Optimization Guide: [use-the-index-luke.com/](https://use-the-index-luke.com/)
- LangChain AI Basics: [python.langchain.com/](https://python.langchain.com/)
- Docker Guide: [youtube.com/watch?v=fqMOX6JJhGo](https://youtube.com/watch?v=fqMOX6JJhGo)
- AWS Deployment (EC2): [youtube.com/watch?v=6WGNmAbG2MU](https://youtube.com/watch?v=6WGNmAbG2MU)

## **Final Challenge**

This is about execution, not just learning. Stick to this roadmap, push code daily, and start networking aggressively by Week 3. No excuses. Get the project deployed and secure an internship.