

■ Complete Roadmap: Backend Developer + Ethical Hacker + AI Engineer

1■■ Backend Developer (Java)

Skills & Tools:

- Core Java (OOP, Collections, Streams, Multithreading)
- Advanced Java (JDBC, Servlets, JSP)
- Frameworks: Spring, Spring Boot, Hibernate
- Databases: MySQL, PostgreSQL, MongoDB
- APIs: REST, GraphQL
- Testing: JUnit, Mockito
- Version Control: Git/GitHub
- Build Tools: Maven, Gradle
- Deployment: Docker, Kubernetes, AWS/Cloud

Timeline (6–8 Months):

- 1 Month 1–2: Core Java + OOP + Collections
- 2 Month 3: JDBC + Servlets + JSP
- 3 Month 4–5: Spring Boot + Hibernate + REST APIs
- 4 Month 6: Databases + Git + Testing
- 5 Month 7–8: Cloud Deployment + Projects (Portfolio)

2■■ Ethical Hacker (Cybersecurity)

Skills & Tools:

- Networking: OSI Model, TCP/IP, Ports
- Linux (Kali/Parrot OS): Commands, File System, Scripts
- Programming: Python, Bash, Java (optional)
- Web Security: SQL Injection, XSS, CSRF, Authentication flaws
- Tools: Nmap, Wireshark, Burp Suite, Metasploit
- Penetration Testing Labs: TryHackMe, HackTheBox
- Certifications: CEH, OSCP (optional but valuable)

Timeline (6–12 Months):

- 1 Month 1–2: Networking + Linux basics
- 2 Month 3: Python + Bash scripting
- 3 Month 4–5: Web Security Fundamentals + Tools (Nmap, Wireshark)
- 4 Month 6–8: Burp Suite, Metasploit + Capture The Flag (CTF) challenges
- 5 Month 9–12: Real Pentesting Labs (HackTheBox, TryHackMe) + Certifications

3■■ AI Engineer

Skills & Tools:

- Math: Linear Algebra, Probability, Statistics
- Python: NumPy, Pandas, Matplotlib
- Machine Learning: Scikit-learn (Regression, Classification, Clustering)
- Deep Learning: TensorFlow, PyTorch
- AI Projects: Chatbots, Recommendation Systems, Intrusion Detection Systems
- Specialization: AI in Cybersecurity (Threat detection, anomaly detection)

Timeline (8–12 Months):

- 1 Month 1–2: Python + Math Basics
- 2 Month 3–4: Machine Learning (Scikit-learn)
- 3 Month 5–7: Deep Learning (TensorFlow/PyTorch)
- 4 Month 8–10: AI Projects (Chatbots, Recommender Systems)
- 5 Month 11–12: AI + Cybersecurity projects (Anomaly Detection, IDS)

■ Combined Strategy

- Focus first on Java Backend (main career foundation)
- Parallel: Learn Linux + Networking for hacking
- Later: Add Python + AI skills
- Final Goal: Backend Developer + Ethical Hacker + AI Engineer combo