

# Akash Kumar

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## PROFESSIONAL SUMMARY

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Backend Engineer with hands-on experience building production apps in **Spring Boot** and **FastAPI**. Designed and shipped a uptime monitoring platform **keepalive** from scratch. Strong foundation in system design, async architecture, and secure API development.

## EDUCATION

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### NIST University

*B.Tech in Computer Science and Engineering*

Berhampur, Odisha  
2023 – 2027 (*Expected*)

### A.M College

*Higher Secondary (XII - Science)*

Gaya, Bihar  
2021 – 2023

## TECHNICAL SKILLS

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**Languages:** Java, Rust, Python, C, Bash

**Backend & Frameworks:** Spring Boot, Hibernate, Spring Security, FastAPI

**Databases:** PostgreSQL, MongoDB, Redis

**Cloud & Infra:** Git, Linux, Docker, GitHub Actions, AWS

**AI Integration:** LangChain, RAG, LangGraph

**Concepts:** Computer Networking, System Design, Linux Administration, OWASP TOP 10

## PROJECTS

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**KeepAlive — SaaS Uptime Monitor** | *Java, Spring Boot, Next.js, PostgreSQL, Redis, Docker, GitHub Actions* | [GitHub](#) | [Live](#)

- Built and **fully deployed** a production SaaS uptime monitoring platform — Spring Boot 3 backend + Next.js frontend — with automated multi-endpoint tracking, SSL certificate validation, and a live domain at [keepalive.akakash.me](https://keepalive.akakash.me).
- Leveraged **Java Virtual Threads (Project Loom)** for asynchronous parallel endpoint checks, achieving high concurrency with minimal thread pool and CPU overhead.
- Built a fault-tolerant alert subsystem via the **Resend API** with decoupled notification workers to dispatch real-time downtime alerts upon automated state-failure verification.
- Shipped a full **CI/CD pipeline** with GitHub Actions: multi-stage Docker builds, automated SSH deployment to an Azure Linux VPS, and zero-downtime container rollouts.

**KnowledgeBase AI** | *Java, Spring Boot, Python, FastAPI, LangChain, Qdrant, Redis, PostgreSQL* | [GitHub](#)

- Architected a **multi-tenant SaaS platform** — Spring Boot core API + FastAPI AI service — with strict company-scoped data isolation across all 7 JPA entities, eliminating cross-tenant data leakage.
- Enforced **4-tier RBAC** (Owner / Admin / Member / Viewer) via Spring Security and a custom **JwtFilter**, securing 14+ REST endpoints with role-scoped access control.
- Implemented a **RAG pipeline** (LangChain + Qdrant, 768-dim Gemini embeddings) with SSE streaming, Redis-backed session history, and auto-generated summaries — reducing manual document review time by ~50%.

**Distributed C2 Framework** | *C, Python (FastAPI)* | [GitHub](#)

- Built a **high-concurrency FastAPI backend** with a Redis-backed persistent task queue for reliable command dispatch to multiple agents without message loss on disconnect.
- Developed a **lightweight C agent** using WinAPI and syscalls for low-level OS access, demonstrating systems-level programming and OS internals knowledge.
- Applied the same **JWT + RBAC security model** used in production SaaS work, validating the pattern across two independent architectures.

## LEADERSHIP & EXPERIENCE

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**President | Club Excel**

NIST University

- Organized university-level coding competitions and workshops; mentored juniors in Backend Development and Cybersecurity.

## CERTIFICATIONS

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**Neo4j Certified Professional** – Neo4j

**TryHackMe Junior Pentester** – Practical Penetration Testing & Privilege Escalation

**TryHackMe Cybersecurity 101** – Introduction to Cyber Defence & Security Principles

**TryHackMe Pre-Security** – Network Fundamentals, Linux & Web Security

**Cisco Networking Basics** – OSI Model, IP Addressing & Subnetting Mastery