

# Tran Thanh Binh

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## SUMMARY

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Backend-focused Information Technology student with experience building scalable applications using Node.js, TypeScript, PostgreSQL, Redis and Apache Kafka. Developed both monolithic and microservices systems featuring real-time communication, authentication, caching and containerized deployment. Seeking a Backend Engineer Internship to apply and expand software engineering skills in a production environment.

## EDUCATION

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### Hanoi University of Architecture

Bachelor of Engineering in Information Technology; GPA: 3.28/4.0

Hanoi, Vietnam

Sep 2022 – Expected Jun 2027

## APPLIED PROJECTS

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**BianEvent — Event Ticketing System** | Node.js, Express.js, TypeScript, Kafka, PostgreSQL, Redis, Prisma, Socket.io, Next.js, Docker

 [github.com/TrBinhDev/BianEvent-System](https://github.com/TrBinhDev/BianEvent-System)

May 2026 – Jul 2026

- Independently designed and built a **pnpm monorepo** with 4 independent backend services and a Next.js web client, each service owning its own PostgreSQL database (Database-per-Service).
- Built 61 endpoints (53 public + 8 internal) via API Gateway with **JWT** auth, **RBAC**, rate limiting, `x-internal-key` internal APIs; Docker Compose for local infra, Cloudflare R2 for image storage.
- Ensured **idempotency** via client-supplied Idempotency-Key cached in Redis (TTL 60s), returning the original response on duplicate requests.
- Prevented **overselling** via atomic UPDATE (`WHERE available_slots >= quantity`) with full Prisma transaction rollback on failure.
- **Load tested** the booking flow with k6 (local): 100 slots yield exactly 100 bookings, surplus requests return 409, p95 ~42ms — verifying overselling prevention.
- **Event-driven** architecture with Kafka (8 topics / 2 consumer groups): a single event fans out to multiple services (`event.cancelled` → email(Resend) + slot refund); Socket.io live feed broadcasts real-time slot updates.

**Academic Staff Management System** | Node.js, Express.js, TypeScript, Kafka, PostgreSQL, Redis, Prisma, Socket.IO, Docker

 [sc-pj.bian.io.vn](https://sc-pj.bian.io.vn)

Feb 2026 – May 2026

- Independently designed and built a **full-stack** system (backend, web Next.js, mobile React Native) managing staff profiles and research submissions for Hanoi University of Architecture using npm workspaces.
- Designed 65 endpoints (55 public + 10 internal) via API Gateway with full Postman test coverage.
- **Event-driven** microservices (Auth, Staff, Research, Notification) via Kafka (13 topics); applied **fan-out** on research-completed across 2 independent consumer groups (Notification, Staff) for email/push and award persistence.
- **JWT** authentication with email-based password reset and refresh token rotation for secure session management.
- Enforced **RBAC** (3 roles: Admin, Management, Staff) layered with **ABAC** for fine-grained rules based on ownership and department scope; rate limiting on all endpoints.
- Configured **GitHub Actions CI** to build/push changed service images to Docker Hub per pull request; Docker Compose for local infra; files stored on Cloudflare R2.

## TECHNICAL SKILLS

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### Languages

TypeScript, JavaScript, SQL

### Databases

PostgreSQL, Redis, MongoDB

### Architecture

Microservices, Event-driven, Monorepo, Monolith

### Backend

Node.js, Express.js, REST APIs, WebSocket

### ORM & Messaging

Prisma, Apache Kafka

### DevOps & Tools

Docker, GitHub Actions, Cloudflare R2, Git, Postman, k6