

# Adrin Paul

Delhi | [Mail](#) | [LinkedIn](#) | [Portfolio](#) | [Github](#)

## Professional Summary

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Backend software engineer with 2+ years of experience designing distributed systems, microservices, and production-quality APIs. Experienced contributor to **gRPC-Java** (merged concurrency fixes and architecture discussions) and **Microsoft PromptKit**. Demonstrated capacity to troubleshoot complex system failures, optimize database performance, and implement scalable backend systems from end to end.

## Technical Skills

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**Languages:** Java, JavaScript (Node.js), SQL, Python

**Frameworks & Libraries:** Spring Boot, Express.js, React.js, Next.js

**Databases & Caching:** PostgreSQL, Redis (Lua scripting, token-bucket rate limiting)

**Architecture:** Microservices, RESTful APIs, JWT Authentication, HLS Media Streaming

**Tools & Platforms:** Git, Docker, Postman

**Concepts:** System Design, Feed Caching, Query Optimisation, Indexing, Concurrency

**UI Frameworks:** Material UI, Joy UI, Tailwind CSS, Bootstrap

**AI:** Prompt engineering, AI-assisted development workflows, LLM Integration (Open AI and Deepseek API's), Retrieval Augmented Generation (RAG) Basics, AI-driven debugging Code Optimization, AI for System Design Architecture Reasoning

## Open-Source Contributions

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**gRPC-Java** | *Java, Concurrency, Distributed RPC, Architectural Design* *gRPC Java*

- **Merged PR #12705:** Diagnosed and fixed a **critical race condition** in `ManagedChannelOrphanWrapper`, improving channel lifecycle correctness under concurrent shutdown scenarios (Issue #12641).
- **Merged PR #12700:** Improved contributor documentation to reduce developer onboarding friction across the gRPC-Java ecosystem (Issue #12657).
- **PR Created (Issue #12448):** Designing an asynchronous `MirroringInterceptor` to enable transparent **traffic shadowing** for canary and shadow-testing workflows.
- **Issue #12648 (Proposal):** Authored an architectural proposal to refactor the client execution engine, targeting **thread-parking bugs on ARM64** — demonstrating deep knowledge of JVM concurrency and cross-platform runtime behaviour.

**Microsoft — PromptKit** | *JavaScript, Session Profiling, Developer Tooling*

- **Draft PR:** Built a **session profiler template** to monitor and analyse session performance, contributing to developer-facing tooling within the Microsoft open-source ecosystem.

## Featured Project

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**LinkedUp** — LinkedIn-style Distributed Social Platform | *Java, Spring Boot, Node.js, Redis, PostgreSQL, HLS*

- Architected a **microservice backend** with a Node.js/Express API gateway routing authenticated requests to Spring Boot services via internally-issued JWTs, enforcing strict service-boundary security.
- Engineered a **Redis Lua token-bucket rate limiter** across message, conversation, and feed endpoints — eliminating burst abuse without distributed lock overhead.
- Designed an **HLS adaptive video pipeline** (FFmpeg → `.m3u8/.ts` segmentation + sprite thumbnails) for seekable, bandwidth-aware media streaming on object storage.
- Implemented **PostgreSQL full-text search** with GIN indexes and Redis query-result caching, reducing search latency under concurrent load.

## Experience

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**CSIR – Innovation Protection Unit (IPU)**

**New Delhi, India**

*Full Stack Developer*

*Jan 2024 – Present*

- Achieved **35%** improvement in backend response time through SQL query profiling, addition of composite indexes on columns with high cardinality, and removal of N+1 query anti-patterns via restructuring of data models.
- Created REST API contracts for a multi-user workflow application (Node.js/Express/PostgreSQL), enabling concurrent document-level operations across cross-functional teams.
- Implemented a highly modular React.js frontend architecture, enabling rapid feature development and minimizing duplication in UI components.
- Functioned in environments characterized by high levels of ambiguity, effectively translating unstructured requirements into structured and production-ready system designs.

**CodeClause**

**Delhi, India**

*Web Development Intern*

*May 2023 – Jun 2023*

- Helped develop and ship web application features, thus enhancing skills in HTML, CSS, JavaScript, and component development.

## **Electronic Arts**

*Assistant Executive CS*

**Noida, India**

*Aug 2021 – Mar 2022*

- Assisted in the workflow of EA platforms and improved the efficiency of resolving issues by **15%**.
- Worked with the engineering QA teams in debugging live issues and improving the user experience.
- Gained knowledge of the reliability of live services and large-scale systems.

## **Education**

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### **Noida Institute of Engineering & Technology**

*Bachelor of Technology (B.Tech), Mechanical Engineering*

**Noida, India**

*Aug 2017 – Aug 2021*

### **CSIR – National Physical Laboratory**

*Postgraduate Diploma, PMQC*

**Delhi, India**

*Feb 2023 – Jan 2024*

## **Certifications**

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The Web Developer Bootcamp 2023 | Automate Cybersecurity Tasks with Python (Google) | Deloitte Australia – Cyber Job Simulation