

Ayush Pandey

Systems Engineer

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Skills

General Skills

Graph Databases

Non-relational data models

Distributed systems

Concurrent programming

Consistency protocols

Storage systems

CRDTs

Formal methods

Database design and architecture

System Design

Tools

Neo4j

Gremlin

NoSQL

PostgreSQL

Redis

Docker

Git

UNIX environnement

Languages

Java

C++

Erlang, Elixir

Python

C

Bash

Speaking

Hindi -Native

English - Fluent

French - Conversational

Experience

2022-2025 **PhD Researcher**, LIP6, Sorbonne Université (UPMC), Paris

- **Thesis: CALock: topological multi-granularity locking in hierarchies**
- **Implemented and verified several thread synchronization protocols.** Implemented algorithms in java and c++ as well as database implementations in TinkerPop as PoC. Performed benchmarks for performance evaluation.
- Collaboration in projects involving **industry partners and research labs.** Ongoing collaboration with Telecom sudParis under the project VERDI to design, implement and formally verify a distributed graph database. Second ongoing work within LIP6 on the specification and verification of a distributed key value store.

2021-2022 **Research Intern**, LIP6, Sorbonne Université (UPMC), Paris

- **Implementation of a cache for a CRDT datastore.** Worked on designing and implementing an in memory cache and checkpoint store for AntidoteDB.
- Undertook performance benchmarking in a distributed environment with Riak Bench.
- Fixed several bugs in the general implementation of AntidoteDB and achieved a 40% performance improvement in the read path.
- **Tech Report:** Persisting the AntidoteDB Cache

2020-2021 **Full stack Web Engineer**, LernFair e.v., Remote, Germany

- Worked on the development of an online learning platform for school students to facilitate remote learning during Covid-19 lockdowns.
- Implemented the frontend in ReactJS and the backend in NodeJS and GraphQL along with alpha and beta testing of features.
- Implemented the service layer in a microservice architecture with content delivery through REST APIs.

2020-2021 **Research Assistant**, German Center for AI (DFKI), Kaiserslautern, Germany

- Developed a custom tool for visual graph editing tool with automated graph structuring and enforcing P&ID constraints on nodes and edges of the graph in AngularJS and D3.js.
- Writing test suites for performance. testing on peak loads and high data volumes with python.

2017-2019 **Software Engineer**, Newgen Software Technologies, Paris

- Development of custom workflow, content management and business process automation solutions for major Banks, Health care providers and insurance companies.
- Developed custom dashboards and reports for telemetry and report generation.
- Delivered technical training and support to business clients in the asia pacific region.

Education

2025 **PhD in Distributed systems**, LIP6, Sorbonne Université (UPMC)

2022 **Master in CS, Software Engineering**, TU Kaiserslautern, Kaiserslautern, Germany

2017 **Bachelor of Technology**, APJ Abdul kalam technical university, India

Hobbies

Running, Reading, Cooking, Karaoke