

Abhijit Amrendra Kumar

Software Engineer | Data Platform & Infra | Agentic AI Enthusiast

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EDUCATION

- Bachelor of Technology in **Computer Science and Engineering** | IIT Bombay (2021-2025)

SCHOLASTIC ACHIEVEMENTS

- Awarded the **National Fellowship** in the Kishore Vaigyanik Protsahan Yojana (**KVPY** SA stream) exam (2019)
- Secured **All India Rank 45** among a total of **150,000 candidates** appearing for *JEE Advanced 2021* exam (2021)

WORK EXPERIENCE

SDE-1 in Data Platform | Dream 11

(Jul'25 - Ongoing)

- Researched and developed an experimental **Iceberg-native ingestion system** in C++ as a unified component for high-throughput event streaming, eliminating intermediate layers by enabling direct writes to **Apache Iceberg tables**; conducted feasibility studies on modern primitives & solutions to secure collaboration with senior engineering.
- Debugged and resolved critical issues in **large-scale event processing pipelines**, performing deep analysis of distributed system failures to identify root causes and ensure maximum service uptime and data consistency.
- Developed & deployed **Spark jobs** with fan-out architecture for ingesting event streams from **Kafka** into **multiple Iceberg tables** per tenant, implementing partitioning strategies & schema evolution for production data lakes.
- Work extensively with **AWS infrastructure**, provisioning and managing IAM policies, Lambda functions, API Gateway endpoints, RDS instances, Glue catalogs, and Route53 configurations for production data platform services.

AI Intern | Facets Cloud

(Feb'25 - May'25)

- Developed an **Agentic AI** ticket assistant leveraging retrieval over historical resolutions and **discussions** to help engineers streamline debugging by identifying **similar past issues**, **underlying causes**, and **resolution steps**.
- Built **crawlers** to extract company-specific info from **LinkedIn** and official sites for **data enrichment & analysis**.
- Built **agentic workflows** for **automated PR reviews** using LLMs to assess code quality & adherence to guidelines.

Full Stack Developer Intern | MapIT.ai Pvt Ltd

(June'23-Jul'23)

- Developed a bluetooth-based **beacon positioning & path tracking** webpage in React and Django Websockets.
- Refined their CMS system & acquired skills in **GeoDjango** and **PostGIS**, **Django Websockets** and **Docker**

Software Developer | Chocolate Stay Pvt Ltd

(2023)

- Constructed a backend server for **hotel bookings**, **user authentication** and **real-time updates** in **NodeJS**.
- Modeled a hotel management/administrative interface in **ReactJS** and a hotel reservation app in **Flutter/Dart**.

KEY PROJECTS

Flash: In-Memory Database | Self Project

(July'24)

- Integrated **data persistence** with point-in-time snapshots and AOF for continuous logging of write operations.
- Built support for data types like strings, lists, **hashmaps**, **sorted sets** (**AVL trees**), & **heaps** for TTL of keys.
- Incorporated support for **data streams** (sockets in C++) and **time series operations** for timestamped data.
- Accelerated performance using **asynchronous execution & thread pooling** (atomic operations for consistency).

Zeal Interpreter | Self Project

(June'24)

- Developed an interpreter for the Monkey programming language using **flex** for lexical analysis and **bison** for parsing.
- Implemented an **object data model**, alongwith **first-class functions**, **higher-order functions & closures**.
- Constructed a **bytecode generation** module for efficient program execution on a **stack-based virtual machine**.

SCLP C-like Compiler | Course Project: Implementation of Programming Languages

(Apr'24)

- Developed a C-like language compiler, with **language constructs** like **function calls**, **scopes & control flow**
- Implemented the different phases of compilation in C++ using **IRs** to translate high level code into machine code
- Executed register allocation to formulate **RTL** and implemented call stack functionality to generate **assembly code**

Raytracing Engine | Self project

(May'23)

- Developed a ray-tracing engine in C++, with features like **motion blur**, **texture mapping**, and **perlin noise**.
- Created realistic Cornell Box scenes by adding **anti-aliasing**, **emissive lighting** and dielectric & metallic materials.
- Optimized rendering with **Bounding Volume Hierarchies** (grouping objects) and **Octrees** (spatial partitioning).

Enhancing xv6 | Course project: Operating Systems

(Oct'23)

- Added **shared memory** functionality using syscalls and ensured synchronization using **spinlock** and **sleeplock**
- Incorporated techniques like **lazy page allocation** using modified **page fault** handling and memory allocation
- Integrated **multi-threading** functionality and implemented **semaphore** to enforce ordered execution using syscalls

Practical Near Neighbor Search via Group Testing | Course project

(May'24)

- Reduced lookup times by atleast **2.2x** & memory requirements by atleast **5%** for k-nearest neighbour search using **group testing** and distance-sensitive bloom filters, comparing against SOTA algorithms like **FLASH** and **FAISS**.
- Implemented the described technique in C++ and ran benchmarks on **PromethION**, **Webspam**, **URL** datasets.

Synth Bridge | InterIIT Tech Competition

(Dec'23)

- Developed an AI-based project management system with **RAG** with MERN, Langchain, Redis, ChromaDB & AWS
- Secured **silver rank** in the **Trumio** problem statement and **bronze institute rank** in the InterIIT Tech competition

POSITION OF RESPONSIBILITY

Seasons Of Code Mentor (11 Mentees) | Web and Coding Club, IIT Bombay

(May'23 - Jul'23)

Learner Space Mentor (290+ Mentees) | Web and Coding Club, IIT Bombay

(May'23 - Jul'23)

CERTIFICATIONS

Tensorflow for Deep Learning Bootcamp | Zero to Mastery

(Jul'23)

The Complete 2023 Web Development Bootcamp | Udemy

(Jan'23)

The Complete Flutter Development Bootcamp with Dart | Udemy

(Mar'23)