

# ARUP CHAUHAN

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## EXPERIENCE

### Software Engineer

IIT-DB Group Research Lab, Illinois Institute of Technology | *Python, C++, PostgreSQL, Docker*

Chicago, Illinois

May 2024 - Present

- Designing SQL query plans **optimized at systems level**, focusing on **cost estimation** and **execution times** in databases
- Leveraging **ML algorithms** — **DQNs** and **SVMs** with TensorFlow to enhance query plan selections
- Calibrating performance on a **10M multidimensional dataset** via custom C++ module to **achieve 25% improvement**

### Application Engineer (Content Systems Development)

Hindustan Times through Four C Plus (Internet) Co. Ltd. | *Java, Spring Boot, RESTful APIs*

New Delhi, India

Oct 2019 - Apr 2022

- Developed and maintained an **event-driven content publishing service** in Java and Spring Boot, automating content scheduling and periodic publishing via CDN (Akamai), **optimizing workflows by 30%**
- Integrated social media **content publication interface** in web CMS via RESTful APIs secured with OAuth 2.0, **amplifying reach, engagement, and platform traffic by 20%**
- Refactored **backend services** for database upgrade with Hibernate ORM, **reducing transaction latency by 15%**

### Application Engineer (Data Systems Optimization)

Hindustan Times through Four C Plus (Internet) Co. Ltd. | *Java, ExecutorService, JMS, JUnit*

New Delhi, India

Jul 2018 - Oct 2019

- Designed **multithreaded data ingestion pipelines** using ExecutorService, increasing data processing speed by 35%
- Built a suite of Java **servlets for data transformation** into an object-oriented database schema with sub-50ms/file latency
- Implemented and maintained a **transaction integrity monitoring service** via JMS to log and manage operations performed by servlets on the import server database, enhancing **operational visibility by 10%**

## PROJECTS & OPEN SOURCE CONTRIBUTIONS

Microsoft C++ Standard Library (STL) | *C++, Python, CMake*

Microsoft ([Open Source](#))

- Optimizing feature branches of `flat_map` and `flat_set` data structures for **code conformity**. Previously: **refactored skipped integration tests** to investigate root causes and restructured STL system header files for versioning

Spotify Backstage Framework | *TypeScript, React, Storybook.js, Node.js*

Spotify Backstage ([Open Source](#))

- Fixed **application render logic errors** in a core user management component, reinforcing component stability across the Backstage. Conducted **code review** to resolve project dependency inconsistencies, ensuring alignment with the main project

Realtime Notification System | *Golang, MySQL, Redis, Docker*

[Project Link](#)

- Built a real-time notification system in Golang, using Redis for **event-driven messaging** and MySQL for storage. Reduced the **processing latency by 35%** with Go **concurrency model**. Deployed with Docker for **consistent environment replication**

Information Retrieval System | *Python, Django, Scikit-Learn, MongoDB, Amazon CloudStore, Amazon S3*

[Project Link](#)

- Developed a **focused search engine** using TF-IDF, Scrapy and MongoDB, created via Django RESTful API and Template Engine. Utilized **Amazon CloudFront, Amazon S3** for **CDN-based scalability**, achieving **API response time of 200ms**

## HIGHLIGHTS

- Dan Kohn Scholarship: The Linux Foundation, 2024
- Graduate Pathway Scholarship: Illinois Institute of Technology, 2023
- Founding Member of Graduate Executive Team, Machine Learning Club at Illinois Institute of Technology (ML@IIT), 2023

## EDUCATION

### Master of Science - Computer Science

Illinois Institute of Technology

Chicago, Illinois

Aug 2023 - May 2025

Relevant Coursework: Advanced Database Organization, Design and Analysis of Algorithms, Operating Systems

### Bachelor of Technology - Computer Science & Engineering

Dr. A.P.J. Abdul Kalam Technical University

Lucknow, India

Aug 2014 - May 2018

Relevant Coursework: Data Structures, Distributed Systems, Software Engineering

## SKILLS

**Languages & Frameworks/Libraries** - Python, Java, C/C++, Golang, TypeScript, JavaScript, Dart, HTML, CSS, YAML, JSON, Flask, Django, Node.js, Next.js, React, TensorFlow **Databases** - PostgreSQL, MySQL, MongoDB, Firebase, Elasticsearch, Pinecone **Platforms & Tools** - Flutter, Git, GitHub, Docker, GCP, AWS S3, CDN (Akamai, Amazon CloudFront), Postman, JIRA, Hibernate, JUnit, GitHub Actions, CMake **Engineering Practices** - RESTful APIs, Microservices, Agile, SDLC, Test-Driven Development, CI/CD, Containerization