

ARUP CHAUHAN

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EXPERIENCE

Software Engineer

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

Chicago, Illinois

May 2024 - Present

- Leveraging **ML algorithms**—**Deep Q-Networks** and **Support Vector Machine** with TensorFlow—to optimize **low-level query response times** and enhance data retrieval efficiency from multidimensional databases
- Orchestrating **cloud-native ML pipelines for a 10M dataset (AWS EKS)**, dockerizing it to achieve 25% faster queries

Application Engineer

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

New Delhi, India

Jul 2018 - 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%**
- 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**

OPEN SOURCE EXPERIENCE

Microsoft C++ Standard Library (STL) | *C++, Python, CMake, CI/CD, Performance Profiling*

Microsoft ([Link](#))

- Addressing memory leaks in thread management within **embedded C runtime library**, optimizing `flat_map` and `flat_set` for code conformity. Previously: Refactored integration tests to identify root causes, and restructured STL headers for versioning

Spotify Backstage Framework | *TypeScript, React, Node.js, CI/CD, Cloud-Native Architecture*

Spotify Backstage ([Link](#))

- Implementing **search functionality** to enhance scalable user discoverability. Fixed navigation flow by **improving routing context** in distributed setups. Conducted a code review to ensure **dev dependency** consistency.

PROJECTS

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, Amazon DynamoDB, AWS (CloudFront, 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**

Route Planning and Directional Mapping Tool | *JavaScript (React), Node.js, Redis, Docker*

[Project Link](#)

- Designed an adaptive route optimization tool with real-time Dijkstra's Algorithm simulations using React for a responsive and interactive UI, Redis for in-memory caching, **achieving a 95% cache hit ratio**, and Docker for scalable deployment

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

Key Coursework: Advanced Database Organization, Design and Analysis of Algorithms, Operating Systems, Information Retrieval

Chicago, Illinois

Aug 2023 - May 2025

Bachelor of Technology - Computer Science & Engineering

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

Key Coursework: Cloud Computing, Data Structures, Distributed Systems, Software Engineering

Lucknow, India

Aug 2014 - May 2018

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, AWS RDS, MongoDB, Firebase, Elasticsearch, Amazon DynamoDB
- **Platforms & Tools** - Flutter, Git, GitHub, Docker, Kubernetes, AWS, GCP, Azure, CDN (Akamai, Amazon CloudFront), Postman, JIRA, Hibernate, JUnit, CI/CD (GitHub Actions), CMake, Virtualization (VMware, VirtualBox, KVM, Hyper-V)
- **Engineering Practices** - API development (RESTful, GraphQL), API integration(JWT, OAuth), Microservices, SDLC, TDD