

ARUP CHAUHAN

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EDUCATION

Master of Science - Computer Science

Illinois Institute of Technology

Relevant Coursework: Advanced Database Organisation, Information Retrieval, Operating Systems, Algorithms, Mobile Applications Development

Chicago, Illinois
Aug 2023 - May 2025

Bachelor of Technology - Computer Science & Engineering

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

Relevant Coursework: Data Structures, Design and Analysis of Algorithms, Software Engineering

Lucknow, India
Aug 2014 - May 2018

SKILLS

- **Technologies** - Python, Golang, Java, C/C++, TypeScript, JavaScript, HTML, CSS, YAML, JSON, Spring Boot, Flask, Node.js, Next.js, React, TensorFlow
- **Databases & Platforms/Tools** - PostgreSQL, MySQL, MongoDB, Firebase, Elasticsearch, Git, GitHub, Docker, GCP, Postman, JIRA, Hibernate, JUnit, Selenium, GitHub Actions, CMake
- **Engineering Practices** - RESTful APIs, Microservices, Agile, SDLC, Test-Driven Development, CI/CD, Containerization

EXPERIENCE

Software Engineer

IIT-Database Group Research Lab, Illinois Institute of Technology | *Python, PostgreSQL, TensorFlow*

Chicago, Illinois
May 2024 - Present

- Designing SQL query execution plans optimized at the systems level, focusing on cost estimation and execution times
- Utilizing ML techniques, including Deep Q-Networks and Support Vector Machines to optimize query plan selections

Application Engineer (Content Systems Development)

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

New Delhi, India
Oct 2019 - Apr 2022

- Developed and maintained an event-driven auto-publishing service for the web content management system using Java and Spring Boot, implementing scheduling and triggers to optimize content workflows, with 30% boosted efficiency
- Integrated social media content publication capabilities into web CMS by implementing RESTful API endpoints secured with Spring Security OAuth 2.0, resulting in a 20% increase in content reach and engagement
- Refactored backend services to extend compatibility with database upgrade rollout with Hibernate-based ORM, optimizing database interactions by 25%

Application Engineer (Data Systems Optimization)

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

New Delhi, India
Jul 2018 - Oct 2019

- Created a suite of Java servlets to transform XML data into a proprietary object database schema format
- Designed a multithreaded data ingestion pipeline within the servlet architecture, leveraging Java's ExecutorService to parallelize data processing tasks, resulting in a 25% increase in data processing speed
- Implemented and maintained a notifier service using JMS to ensure operations performed by servlets on the import server database are properly managed and logged, enhancing transaction integrity by 35%

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

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 processing latency by 35% with Go concurrency model. Deployed with Docker for consistent environment replication

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

Information Retrieval System | *Python, Flask, Scikit-Learn, MongoDB, RESTful APIs*

[Project Link](#)

- Developed a focused search engine using TF-IDF (Scikit-Learn), Scrapy for targetted data extraction, and an HTML to JSON parser. Integrated it with MongoDB and deployed via a Flask RESTful API averaging a 200ms response time