

Raunak Singh

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Education

University of Illinois Chicago

Master of Science, Computer Science

Expected Dec 2025

Chicago, Illinois

- **Relevant Coursework:** Distributed Systems in Cloud, Human-Computer Interaction, Artificial Intelligence, Data Science

National Institute of Technology, Calicut

Bachelor of Technology, Computer Science and Engineering

2017-2021

Calicut, Kerala

- **Relevant Coursework:** Computer Security, Data Structures and Algorithms, Cryptography and Number Theory.

Technical Skills

Languages: C, C++, Java, Python, Javascript, HTML, CSS, Flutter, Scala, SQL

Technologies and Frameworks: React.js, Node.js, Spring Boot, AWS, GCP, Docker, Hadoop, Spark, Kafka, Git, JIRA

Experience

Deutsche Bank

Senior Analyst – Deutsche Wealth Online

Jul 2021 – Dec 2023

Pune, Maharashtra

- Engineered a portfolio management and trading application with functionalities like live trading, securities management, payments, and portfolio management, enhancing controls through SDLC processes."
- Spearheaded the development of a React-Redux user interface using a Micro-Frontend framework, enhancing modularity and reducing the codebase by 25%.
- Collaboratively engaged with a team of developers, product managers, legal, and compliance teams in an agile environment to analyze, gather, and validate requirements for implementing accurate controls.
- Integrated and developed RTK Query for seamless end-to-end integration of Spring Boot REST APIs with databases, leveraging smart caching, efficient data fetching, and streamlined troubleshooting.
- Utilized qualitative risk management to implement controls for remediating OSS and React Native vulnerabilities, ensuring continuous code patching through Continuous Integration and Delivery (CI/CD) to enhance system reliability and confidentiality.
- Created an archetype to bootstrap new microservices by incorporating object-oriented design patterns, reducing development, and increasing code reusability.

Cisco

Software Engineer Intern

Jun 2020 – Jul 2020

Bengaluru, Karnataka

- Designed and implemented a static call graph for the IOS-XR database in C/C++, developed as a Visual Studio plugin, resolving duplicate function issues through an XML parser.

Projects

AUTHIFY (ETHEREUM BLOCKCHAIN) | Flutter, Dart, Blockchain, Smart Contracts

- Designed a lightweight Flutter Decentralised Application (DApp) using the Ethereum blockchain to detect counterfeit food products by leveraging immutable blockchain transaction records for data integrity.
- Implemented RFID technology for real-time scanning and automated verification, enhancing data protection and supply chain transparency.
- Developed control mechanisms aligned with the CIA triad (Confidentiality, Integrity, Availability) to safeguard data privacy and ensure secure, compliant transactions using smart contracts.

DISTRIBUTED LLM | Scala, Hadoop, Spark, AWS

- Developed a large language model (LLM) from scratch, leveraged distributed cloud computations for data processing and vector embeddings, optimizing scalability and performance.
- Implemented cloud-based Map/Reduce architecture on AWS EMR and deployed generative LLM systems using Amazon Bedrock, Lambda functions, and Spark for efficient neural network training.
- Utilized Scala with the ScalaTest framework to build testable, scalable applications, adhering to functional programming principles and gaining expertise in cloud computing, parallelism, and deployment best practices.

Secure Electoral Data Collection and Compliance

- Volunteered with a local election body to collect electoral data for uneducated voters, handling sensitive Personal Identifiable Information (PII).
- Led data protection efforts, including the encryption of voters' last names to prevent misuse and mitigate influence on communities with large vote shares.
- Collaborated with engineers to implement security controls, ensuring compliance with local data privacy laws and regulations, and validated adherence to legal workflows through testing.

EXPOS (EXPERIMENTAL OPERATING SYSTEM) | C, Semaphores, Mutex,

- Demonstrated expertise in low-level system design and concurrency management by designing and implementing a miniature operating system from scratch using Expl.
- Developed core modules, including Scheduler, Exception Handler, and Pager Module, to handle critical system functions.
- Implemented essential system calls such as Fork, Exec, Wait, and Semget, enabling process management and inter-process communication.

CERTIFICATION ACCOMPLISHMENTS

Cloud Associate Engineer (Google Cloud Platform) : Verified proficiency in cloud infrastructure and services, focusing on deployment and optimization on Google Cloud Platform.