# Karan Chopra

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## EDUCATION

**University of Washington, Bothell, WA**

*Master of Science, Computer Science and Software Engineering [GPA: 3.71/4]* — *Sep 2022 - May 2024*

**Guru Gobind Singh Indraprastha University, India**

*Bachelor of Technology, Information Technology [GPA: 7.6/10]* — *Aug 2014 - May 2018*

## WORK EXPERIENCE

**Signify** — **Seattle, USA**

*Founding Engineer [Full Stack Developer]* — *June 2024 – August 2024*

- Developed version 0 of an AI-powered Compliance Management System for Manufacturing.
- Utilized **React** within Remix to build responsive user interfaces with server-side rendering for enhanced performance.
- Developed backend services in **Python** and **TypeScript,** managing data with **PostgreSQL** and **Prisma ORM.**
- Utilized **JavaScript, Tailwind CSS,** and **Clerk** for front-end styling and authentication, while **Docker** and **Git** were used for containerization and version control.
- Leveraged **GCP, AWS**, and **OpenAI** for cloud deployment and AI integration, ensuring scalability and intelligent functionality.

**Full Stack Developer,** University of Washington, USA — *June 2023 – Present*

- Collaborated with the project owner to transition a teaching tool web app for 200+ users at the University of Washington into an open-source, live platform using **Python, React, and MySQL.**
- Led CI/CD pipeline implementation, reducing deployment time by 40%, and integrated Acceptance testing and **Agile** practices with **MS Azure** and Kanban boards.
- Managed a team of 9, conducting 10+ code reviews weekly, streamlining code flow, assisting with environment setup, and writing 90+ pages of documentation.
- Mentored the team, increasing development efficiency by 30%, by ensuring timely completion of all project milestones.

**Software Engineer,** Accenture, India — *Apr 2020 – Aug 2022*

- Elevated user engagement by 25% and improved operational efficiency by 20% over 6 months by seamlessly integrating 15+ third-party services into a client's web application using **Java, Spring Boot,** and **MS SQL.**
- Engineered interactive, responsive **React JS** dashboards for enhanced user experience, boosting engagement and saving 15% time.
- Designed a highly scalable **Apache Kafka** streaming app processing 200K-500K topics daily, reducing backend server workload.
- Developed **RESTful** APIs serving data in **JSON** to **front-end** based on changing user inputs handling over 30,000 users.
- Wrote **PowerShell** script analysing network load on MS SQL database, notifying bottlenecks, resulting in 30% less downtime.
- Constructed **Jenkins** script to automate CI/CD pipelines to build, test, and deploy processes, reducing time by 20%.
- Built Java **Junit** tests, increasing code coverage by 35% and **code reviews**, reducing errors by 20%, and boosting code quality by 15%.
- Led a 3-member team in documenting codebase on **GitHub Wiki**, resulting in easier team collaboration, and following best practices.

**Associate Software Engineer,** Accenture, India — *Oct 2018 – Mar 2020*

- MF Cataloging: Transitioned Mutual Funds [MF] catalog from **SQL** to Elasticsearch using **Spark SQL**, UDFs, and data frames, with **Apache Airflow** for scheduling and monitoring, reducing master database load and improving API response speed by 40%.
- MF parsing: Programmed AMC [Annual Maintenance Contract] statement parsing system with Gmail integration and **AWS SQS** for automated tracking, retrieval, and management of failed messages.
- Implemented **REST APIs** with **Spring Boot** and **Hibernate**, enhancing event management and propelling a 40% improvement in coordination and a 30% user increase in the client platform's event module over 6 months due to improved usability and functionality.
- Used **CSS3**, and **HTML5** for design/animations and **Redux,** RESTful APIs for efficient state/data management saving 9% time.
- Ensured good code quality and scalability through comprehensive unit testing with **Mockito.**

**Software Engineering Intern,** National Informatics Centre, India — *May 2017 – July 2017*

- Crafted validation forms on **.NET** framework with **HTML, CSS** for UI, and stored procedures in **MS SQL server** reducing user input errors by 25% and boosting data retrieval speed by 15%.

## PROJECTS

- **Canvas Learning Tool (*Python, Flask, Redux, React, Kanban, Agile, and MS Azure*)** [Ongoing] - The tool used in the university by faculty to interact with the students, currently working on this project to extend the features, make the website open source and live, create CI/CD pipelines, and perform acceptance testing. Practicing Agile Methodologies, full stack development, using MS Azure as the service base, and Kanban board for tracking progress. (Link)
- **P2P Online Tic Tac Toe** (***Java, JFrame, JSCH, and Java Socket***) - A networked Tic Tac Toe game for real-time play between remote users or a single user against an automated opponent, utilizing Java Socket connections. (Link)

- **Flight Data Analysis (*Java, JSCH, Apache Storm, HTML, and Zookeeper)* –** Analysed 40 major US airports traffic through distributed data streaming of flight data using Apache Storm and Zookeeper for cluster management. (Link)
- **Local vs Remote Execution of Hazelcast-based inverted indexing (*Hazelcast, Java, and JSCH*) -** The project features two Hazelcast-based inverted indexing programs: one for counting word occurrences in files, and another using remote execution on cluster nodes to analyse performance. (Link)
- **Wordle: Online Vocab game (*HTML and JavaScript*) -** Wordle is a web-based word game where users guess a five-letter word, receiving feedback per turn, with features for score sharing, user sign-up, and a design focused on accessibility and user-friendliness. (Link)
- **Zookeeper supported Automatic Failover in a Master Worker Distributed Execution (*Java, JSCH, and Apache Zookeeper*) -** The project leverages Zookeeper for automatic failover and distributed synchronization in executing graph-bridge tasks within a master worker framework, ensuring exclusive task access and timely completion. (Link)
- **Mobile-Agent-Execution-Platform (*Java and JSCH*) -** A Java-based mobile-agent platform utilizing RPC, dynamic linking, and object serialization, optimizing task execution across distributed networks. (Link)
- **Carethroz (*Python, Flask, Bootstrap-HTML, CSS, and JavaScript*) -** A Senior caregiver services marketplace application. Used Python as the backend language, Flask handles the server-side logic, dynamic content generation, and routing, while Bootstrap enhances the user interface by providing a consistent and appealing design. (Link)

## SKILLS

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| **Languages:** | Java, Python, C++, C, JavaScript, HTML, CSS, SQL, C# and .Net. |
| **Cloud:** | Amazon Web Services (AWS): AWS Elastic Beanstalk, AWS Lambda, AWS ELB, Amazon Cognito, Amazon Kinesis, Amazon DynamoDB, Amazon EC2, Amazon VPC, AWS IAM, Amazon SQS, Amazon RDS, Amazon SNS and Amazon S3. |
| **Databases:** | MongoDB, DynamoDB, MySQL, RDS, PostgreSQL, and MS SQL. |
| **Technologies & Frameworks:** | Spring-Boot, React, NPM, NodeJS, Flask, RESTful APIs, Apache Kafka, Apache Storm, Zookeeper, Hazelcast, Jenkins, Agile, Redux, Maven, JUnit, Spark, Apache Airflow and Postman. |
| **Tools:** | Git, Jira, GitHub, Visual Studio Code, IntelliJ, and PyCharm. |
| **Core Knowledge:** | Data Structures and Algorithms, Object Oriented Programming, Distributed Systems, Software Architecture, Design Patterns, System Design, Database Management System, Operating System, and Software Testing. |
| **Work Areas:** | Distributed Systems, Backend Development, Full Stack Development, and Cloud Native Development. |

## CERTIFICATIONS AND AWARDS

- **AZ-900** (AZURE fundamentals), Microsoft, November 2020, and **JAVA, C, and C++** training, IIT Bombay, India.
- Performance recognition awards, “Star of the month”, April 2021, and “Act as a true partner-Stewardship”, July 2022 by Accenture.