

Sunvir Singh

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EDUCATION

- **University Of Waterloo** Waterloo, ON, Canada
Master of Electrical and Computer Engineering; CGPA: 8.68/10 *September 2023 – August 2024*
- **Thapar Institute of Engineering and Technology** Punjab, India
Bachelor of Computer Engineering; CGPA: 9.23/10 *June 2017 – May 2021*

TECHNICAL SKILLS

- **Languages & Frameworks:** Java, C++, Python, SQL, Spring Boot, Hibernate, JPA, JUnit, Mockito
- **Tools & Technologies:** Git, Jenkins, Maven, Grafana, MySQL, PostgreSQL, Docker, Redis, Jira, Postman
- **Programming Concepts:** Object Oriented Programming, Functional Programming, Multi-Threading, Async programming, Agile, TDD, SOLID principles, Design Patterns, Microservices architecture

PROFESSIONAL EXPERIENCE

- **ION Group** Noida, India
Software Development Engineer - Full time *June 2021 - July 2023*
 - Developed **Multithreaded Microservices** based back-office trading solutions for banks and **financial institutions** across the globe using **Java, Spring, Hibernate, Oracle SQL, C#**.
 - Collaborated with cross-functional teams, product management and business analysts to develop new client requirements from inception to implementation.
 - Took the development lead for multiple projects including POC, design docs creation, and development.
 - Automated dev activities including patch release process using **Jenkins** and created a dashboard for test failures.
 - Improved time efficiency using statistics collection through **Prometheus, Grafana, SQL Indexing** and Cache implementation of complex and frequent DB queries found through AWR reports.
 - Reduced memory footprint using **Heap Dump** analysis through JProfiler.
 - Provided **Development Support** for urgent client issues.
- **ION Group** Noida, India
Software Development Engineer - Intern *Feb 2021 - May 2021*
 - Collaborated with senior developers through pair programming.
 - Authored comprehensive unit and automated tests following **TDD**, enhancing code quality assurance.
 - Actively contributed to feature development and bug fixes following **SOLID Principles** and **Design Patterns**.

PERSONAL/ACADEMIC PROJECTS

- **Connect - Social media Spring application** (*GitHub*)
 - Client-Server based social media application made with **Java, Spring, Hibernate, PostgreSQL** and React.
 - Functionalities include a user being able to securely log in, create posts, follow other users and chat with them.
 - Leveraged **Jira** to create tickets for each piece of development.
 - Utilized **JUnit** for testing and **Jenkins** for monitoring.
- **Traffic Intersection Camera Optimization** (*GitHub*)
 - Solved the problem of installing minimum possible cameras at intersection of streets using **Python** and **C++**.
 - Used **Multithreading** and Inter Processor Communication (**IPC**) to efficiently distribute work among different process and facilitate communication.
 - Implemented an approximate algorithm for the Vertex Cover problem to find vertex for installation of security cameras at traffic intersections.
 - Computed the approximation ratio between the MiniSAT solver and the approximation algorithms and presented a comparative study documenting the trade-offs in running time and accuracy.
- **Eduweb - Educational platform for students and teachers** (*<https://sunvir.pythonanywhere.com>*)
 - Developed a Django and **Python** based **Web Application**, enabling teachers to create courses, enroll students and add content such as assignments.
 - Implemented features allowing teachers to create online questionnaires for student participation.
 - Created a student dashboard for viewing performance and tracking progress on assignments and questionnaires.