

Harsiddak Singh Bedi

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EDUCATION

Thapar Institute of Engineering and Technology, Patiala
Bachelor of Engineering in Computer Science (8.56 CGPA)

Punjab, India
October 2021 – August 2025

EXPERIENCE

ION Trading

Software Engineer

January 2025 – Present
Noida, India

- Developed core components of a large-scale **derivatives trading** platform in **C++** and **Angular**
- Specialized in **Angular Zones and Change Detection**, resolving complex execution issues across teams
- Reduced redundant change detection cycles and resolved **memory leaks**, significantly improving application responsiveness, stability, and load times by **30%**
- Integrated **SonarQube** into CI/CD, fixing 150+ critical issues and improving **Jest** coverage from **65%** to **92%**
- Architected a **codebase visualizer** for **1,000+** files to speed up architectural understanding by **50%**

PilotPlans

Software Engineering Intern

June 2023 – May 2024
Remote

- Worked on **backend** and client-facing services for a **trip planning platform** serving **30,000+** users
- Built the **mobile application** from scratch, integrating APIs for group trips, maps, and itinerary management
- Implemented **30+** **product features** and improved user workflows, increasing **user retention** by **21%**
- Developed services using **Node.js**, **GraphQL**, and **MongoDB**, with real-time sync via Firebase

TECHNICAL SKILLS

Languages: C++, C, Python, JavaScript, TypeScript, SQL

Frameworks: Django, Node.js, Angular, React.js, Next.js, React Native

Datastores: PostgreSQL, MySQL, MongoDB, Redis

Infrastructure & Tools: Docker, Kubernetes, Kafka, Git, Linux, AWS, TCP/IP, WebSockets

CS Fundamentals: Data Structures and Algorithms, Operating Systems, Computer Networks, Database Management Systems, Object Oriented Programming

PROJECTS

Threadsafe Key-Value Store — C++, Multithreading, CMake



- Engineered a **high-performance**, thread-safe key-value store in modern C++ with concurrent reads and writes
- Designed sharded storage with **per-shard mutexes** to reduce lock contention and scale multi-threaded access
- Implemented **durability** and crash recovery using Write-Ahead Logging (**WAL**) and binary snapshots
- Developed pluggable **eviction policies** (LRU, TTL) with lock-safe callbacks and background cleanup
- Achieved **8M+** **ops/sec** throughput under multi-threaded benchmarks while preserving correctness

Campus Operations Platform — Django, PostgreSQL, Redis, WebSockets, Docker, Kafka



- Built a backend system to manage hostel operations (cleaning, mess, leave, inventory) for **12,000+** users
- Designed REST APIs and **WebSockets** for real-time status updates across operational workflows
- Containerized services using **Docker**, used **Redis** for caching, and **Kafka** for asynchronous event processing

POSITIONS OF RESPONSIBILITY

Creative Computing Society, TIET — General Secretary

Jan 2022 – May 2024

- Led** the most prestigious technical society of the college and managed **200+** society members
- Organized and Managed national-level **Coding competitions** and **Hackathons** with a footfall of **3000+**

ACHIEVEMENTS

- Knight** (1886) on [Leetcode](#), **Specialist** (1530) on [Codeforces](#), and **3*** (1712) on [Codechef](#)
- Awarded the **Merit Scholarship** at College for academic achievements
- Winner – Best Crowd Voted (**MLSC Hack 2023**), Best First Year (**Makeathon 4.0 2022**)
- Arista Cloud Engineer: **ACE L1 Certification**