

KARAN THAKUR

📞 7018179490 ✉ iamthakurkaran07@gmail.com 🔗 [linkedin.com/in/thakurkaran](https://www.linkedin.com/in/thakurkaran) 🌐 github.com/thakurkaran007

Summary

Computer Engineering student with hands-on experience building scalable, mission-critical distributed systems using C++, TypeScript, and AWS. Experienced collaborating across technical and business teams to design, develop, and deliver reliable services under tight timelines, with a strong foundation in data structures, algorithms, and OOP. Eager to learn and adopt new technologies, contribute to real-world products at global scale, and empower users through creative and principled software engineering.

Education

Thapar University

Bachelor of Engineering (B.E.) in Computer Engineering | CGPA: **8.1 / 10**

Aug. 2023 – May 2027

Patiala, Punjab

Experience

Full Stack Engineer – EduSprint

Mar. 2026 – May 2026

Tech: AWS (CloudFront, S3), Node.js, React

Bangalore

- Partnered with product and infrastructure teams to scope content-delivery requirements, translating business needs into a token-based **AWS** CloudFront signed cookie solution that enforced information security policy and restricted premium video content strictly to authenticated, paying users.
- Improved API response time by **~25%** through database indexing and query optimization, reducing latency on critical endpoints and directly improving the **quality of experience** for end users of the platform.
- Reduced origin server load by **~35%** by offloading video delivery to CloudFront CDN, cutting buffering incidents and improving content availability — measurably improving the end-user streaming experience.

Projects

Parallel Attention Engine | C++, OpenMP, CUDA, Python | [GitHub](#)

Apr. 2026

- Parallelized Multi-Head Attention with OpenMP and CUDA on top of a sequential C++ baseline.
- Achieved up to **15× speedup**, reducing Multi-Head Attention runtime from **76,268 ms to under 5,000 ms**.
- Optimized CUDA kernels and OpenMP threading strategies, with correctness verified at error $< 1e-4$.

Transcoder | Node.js, AWS (S3, Lambda, ECS, CloudFront), Docker, Redis, Kafka | [GitHub](#) | [Live](#)

Jan. 2026

- Designed and delivered an event-driven HLS video transcoding pipeline (360p–1080p) over a **3-month timeline**, serving **10,000+ concurrent users** via CloudFront CDN; cut processing time **30–40%** with parallel Node.js worker threads and sustained **<3s** time-to-first-segment under peak load.

Zapier Clone | Node.js, TypeScript, PostgreSQL, Kafka, Redis, Docker, Kubernetes | [GitHub](#)

Sep. 2025

- Engineered a workflow-automation platform across **5 microservices** on **Kubernetes**, handling **~500 concurrent webhooks** at **<200 ms** latency; enforced **zero event loss** via Transactional Outbox Pattern and **exactly-once** transaction processing via idempotent Kafka consumers with Redis deduplication.

Technical Skills

Databases & Infra.:	Redis, PostgreSQL, AWS, Docker, Kubernetes, Kafka
Languages:	C, C++, CUDA, TypeScript, JavaScript, Python, SQL, HTML, CSS, MATLAB
Frameworks:	Node.js, Express.js, Next.js, React.js
Testing:	Jest, Vitest, Supertest, Cypress
Coursework:	Data Structures & Algorithms, Operating Systems, DBMS, Object-Oriented Programming, Artificial Intelligence, Computer Networks

Positions of Responsibility

Core Member – ACM Society

Aug. 2024 – Aug. 2025

Thapar University

Patiala, Punjab

- Directed technical initiatives for an ACM chapter of **160+ students**, fostering peer learning and active engagement.
- Delivered **2-hour DSA workshops**, mentoring **50+ students** and improving their problem-solving skills.

Class Representative

Aug. 2024 – Dec. 2024

Thapar University

Patiala, Punjab

- Represented **250+ students** as the primary liaison between students and faculty.
- Coordinated academic concerns and updates, enabling faster issue resolution and improved class coordination.

Achievements

- Solved 700+ DSA Questions:** Strengthened C++ problem-solving skills through LeetCode and GeeksforGeeks.
- Coding Contests:** Participated in **25+ contests**, improving speed, accuracy, and algorithmic thinking.
- Cloud Deployment:** Built and deployed production-grade applications using AWS, Docker, and Kubernetes.