

# SIMARJOT SINGH

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## SUMMARY

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Information Technology undergraduate with strong foundations in Data Structures, Algorithms, and Object-Oriented Programming. Solved 250+ algorithmic problems and built scalable full-stack web applications using JavaScript and Python-based backend frameworks. Proficient in database design, REST APIs, and writing clean, maintainable code following best practices. Passionate about problem-solving, performance optimization, and continuously learning modern technologies including cloud deployment.

## EDUCATION

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<b>Guru Tegh Bahadur Institute of Technology</b> <i>Bachelor of Technology in Information Technology</i>	CGPA: 7.7 2022 – 2026
<b>DAV Public School</b> CBSE XII	73.8% 2022
<b>DAV Public School</b> CBSE X	94.8% 2020

## TECHNICAL SKILLS

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**Programming Languages:** C++, JavaScript, Python, SQL  
**Core Computer Science:** Data Structures & Algorithms, Object-Oriented Programming (OOP), Operating Systems, Computer Networks, DBMS  
**Web Development:** HTML, CSS, JavaScript, FastAPI, Jinja2, REST APIs  
**Databases:** MySQL  
**Tools & Practices:** Git, GitHub, VS Code, SDLC fundamentals, Debugging, Asynchronous Programming  
**Cloud & Deployment:** Render deployment, Basic understanding of AWS services

## PROJECTS

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- AI Video Generator** [Demo]
- Designed and developed a full-stack AI-based video generation system converting user topics into narrated explainer videos.
  - Integrated LLM APIs (Gemini) and third-party media APIs with fallback mechanisms for reliability.
  - Built responsive frontend using HTML/CSS/JavaScript with dynamic state handling and real-time progress updates.
  - Implemented backend services for audio synthesis (gTTS), media processing (FFmpeg), and automated MP4 rendering.
  - Applied modular design principles, error handling, and asynchronous processing to improve scalability and maintainability.
- Social Media Content Analyzer** [Live]
- Built an AI-powered web application that analyzes user-generated text and PDFs to evaluate sentiment and engagement potential.
  - Implemented backend architecture using FastAPI with asynchronous request handling and structured API design.
  - Integrated LLM services with fallback providers to ensure high availability and response reliability.
  - Designed database interactions and optimized server-side rendering using Jinja2 templates.
  - Deployed application to cloud platform (Render) with performance optimizations for low-resource environments.

## ACHIEVEMENTS

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- Problem Solving**
- Solved 250+ Data Structures and Algorithms problems across arrays, strings, recursion, binary search, trees, and dynamic programming.
  - Strong understanding of time and space complexity analysis and optimization techniques.

## CERTIFICATIONS

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**Decoding Data Insights & Impact through Analytics** | *IBM SkillsBuild*  
**Data Structures and Algorithms in C++** | *Coding Blocks*