

# Samaksh Sethiya

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## Education

Vellore Institute of Technology, Bhopal	CGPA: 9.09	Sep 2022 – Present
B.Tech. in Computer Science and Engineering		
Bhanpura Public School	12th Grade (92.0%)	May 2022
Smt Kamala Saklecha Gyan Mandir	10th Grade (93.2%)	April 2020

## Skills

Languages	C, C++, Python, Java, SQL
Libraries/Frameworks	PyTorch, OpenCV, Scikit-learn, SDL, Libsodium
Tools & Cloud	Git, Docker, Linux, Amazon Web Services (AWS)
Databases	MySQL, SQLite, LevelDB
CS Fundamentals	Data Structures & Algorithms, OOP, Distributed Systems
Coursework	Database Management Systems, Computer Networking, Operating Systems

## Projects

Secure Tactical Chat (Encryption, SQLite, C++)	Jun 2025
<ul style="list-style-type: none"><li>Designed a C++ CLI tactical chat application featuring 100% end-to-end encryption using the Libsodium library. Introduced key management, authenticated message encryption, and decryption.</li><li>Developed a client-server architecture with a relay server utilizing LevelDB as a high-performance key-value store for encrypted message blobs. Ensured that all data in transit and at rest on the server is unreadable to unauthorized parties.</li><li>Leveraged SQLite to build a reliable, persistent message queue. Built a comprehensive testing environment with Docker containers and Docker Compose to simulate a multi-client and server chat system.</li></ul>	
Mini GPT Model (NLP, PyTorch)	Mar 2025
<ul style="list-style-type: none"><li>Architected and implemented a character-level GPT language model capable of autoregressive next-token prediction, trained on a corpus of Shakespearean text to learn contextual language patterns.</li><li>Engineered the full Transformer architecture from first principles including self-attention, multi-head attention, positional encodings, and causal masking, following the "Attention Is All You Need" framework.</li><li>Formulated and executed the complete training pipeline—data preprocessing, forward and backward pass implementation, cross-entropy loss calculation, and parameter optimization.</li></ul>	
ASL Translator (Computer Vision, CNN)	Dec 2024
<ul style="list-style-type: none"><li>Developed a real-time hand gesture recognition system that translates American Sign Language (ASL) gestures into English letters, aimed at improving communication accessibility for the deaf and hard-of-hearing community.</li><li>Collected and labeled a dataset of approximately 8,000 images, with 300–350 samples per alphabet letter, and trained a Convolutional Neural Network (CNN) model achieving around 90% accuracy in recognizing static ASL gestures.</li><li>Implemented the system using Python, TensorFlow, Keras, and OpenCV, combining deep learning and computer vision techniques to build an efficient and accurate real-time gesture-to-text conversion pipeline.</li></ul>	

## Achievements

- Specialist on Codeforces** – Achieved a Codeforces rating of 1400, with over 700 questions solved on various online platforms, establishing a solid foundation in Data Structures and Algorithms.
- NPTEL Cloud Computing and Marketing Analytics** – Ranked in the top 1% among 23,000+ learners in Cloud Computing and among 1,500+ learners in Marketing Analytics, demonstrating strong analytical and technical proficiency.
- Top 180 Finalist, HP Power Lab Hackathon (Jan 2025)** – Directed a team of 4 in developing next-gen energy efficiency solutions for Hindustan Petroleum Corporation Limited.

## Extracurricular Activities

- Design Lead, The Poesis Society** – Led the design of promotional materials for well-attended poetry and creative arts events. Managed events with over 150 attendees.
- Core Member, Data Science Club** – Gamified statistical concepts through interactive "Data Sprints," fostering a collaborative sandbox where peers bridged the gap between textbook theory and real-world implementation.
- Event Coordinator, Pi Association** – Created visuals that increased event turnout and expanded audience engagement.