Samaksh Sethiya

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Education

Vellore Institute of Technology, Bhopal **CGPA: 9.10** Sep 2022 – Ongoing
B.Tech. in Computer Science and Engineering

Bhanpura Public School **92.0%** *May 2022*
12th Grade

Skills

Languages: Python, C++, C, Java, SQL

Frameworks & Libraries: Pytorch, OpenCV, Scikit-learn, SDL, Libsodium

Tools & Technologies: Git, MySQL, SQLite, Docker, Linux

Core Concepts: Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems

Projects

Secure Tactical Chat (Encryption, SQLite, C++) *Jun 2025*

- 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.
- 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.
- 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.

Mini GPT Model (NLP, PyTorch) *Mar 2025*

- 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.
- 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.
- Formulated and executed the complete training pipeline—data preprocessing, forward and backward pass implementation, cross-entropy loss calculation, and parameter optimization.

ASL Translator (Computer Vision, CNN) *Dec 2024*

- 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.
- 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.
- 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.

Achievements

- **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.
- **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.

Extra–Curriculars

- 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.
- Event Coordinator, Pi Mathematics Association – Created visuals that increased event turnout and boosted social media reach.