

Samaksh Sethiya

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Education

Vellore Institute of Technology, Bhopal

B.Tech. in Computer Science Engineering

Sept 2022 – Current

CGPA: 9.07

Bhanpura Public School

12th Grade

May 2022

Percentage: 92.0%

Skills

Languages: Python, C++, C, Java, SQL, JavaScript, HTML, CSS

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

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

Projects

Mini GPT Model (NLP, PyTorch)

- Built a simplified GPT language model from scratch, trained on 1.1 million tokens with 10 million parameters, achieving a validation loss of approximately 1.7 using Shakespeare's compiled work.
- Improved training stability with techniques like residual connections, layer normalization, and dropout, enhancing model performance leading to a 15% performance boost and Shakespeare-like text generation.
- Engineered a fully functional text generation pipeline, demonstrating a deep understanding of transformer-based architectures and neural network optimization.

Secure Tactical Chat (Encryption, SQLite, Go, C++)

- Architected a C++ CLI tactical chat app using Libsodium X25519 Diffie-Hellman and ChaCha20-Poly1305 AEAD for 100% end-to-end encryption over DTLS 1.2/UDP with built-in retransmission, fragmentation, and NAT traversal.
- Implemented versioned message framing in C++ with Protocol Buffers for compact binary schemas and forward/backward compatibility, plus a SQLite queue for 100% reliable offline buffering in intermittent networks.
- Developed a Go relay server with LevelDB for zero-knowledge blob routing via REST endpoints and validated resilience under 30% simulated packet loss using Docker tc/netem and Pumba.

ASL Translator (Computer Vision, YOLO, CNN)

- 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 that achieved 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.

Certifications

- **NPTEL** — Cloud Computing, Marketing Analytics
- **Coursera** — C Programming for Everybody
- **FACE Prep** — Problem Solvers: Mastering Data Structures & Algorithms
- **Ethnus** — AWS Solutions Architect - Associate Certification Program

Achievements

- **Top 180 Finalist, HP Power Lab Hackathon (Jan 2025)** – Spearheaded a team of four to design next-generation energy-efficiency solutions for Hindustan Petroleum Corporation Limited.
- **GeeksforGeeks X Adobe GenSolve (July 2024)** – Competed in solving real-world problems through creative solutions.
- **NPTEL Cloud Computing and Marketing Analytics** – Ranked in the top 1% among 23,000+ learners in Cloud Computing and 1,500+ in Marketing Analytics.