

# ANSH GARG

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## EDUCATION

<b>B.Tech – Computer Science and Engineering</b> , VIT Bhopal University	<b>2022 – 2026 (expected)</b>
Cumulative GPA: <b>8.50</b>	
<b>Senior Secondary (12th)</b> , Sudhir Memorial Institute	<b>2021</b>
Percentage: <b>72.3%</b>	
<b>Secondary (10th)</b> , Sudhir Memorial Institute	<b>2019</b>
Percentage: <b>92.3%</b>	

## PROJECTS

### OTI-IoT: Blockchain & AI-based DDoS Defense Framework *Python, Solidity, TensorFlow, Ganache*

- Engineered a decentralized "**Prevent-then-Detect**" framework to secure IoT networks against multi-vector DDoS attacks, integrating a Consortium Blockchain with Deep Learning.
- AI Intrusion Detection (IDS):** Designed and trained 7 distinct RNN architectures (GRU, LSTM, Bi-LSTM) on the **CICDDoS2019** dataset, achieving a peak accuracy of **99.0%** using a hybrid **CNN-GRU** model implemented in TensorFlow.
- Blockchain Prevention (IPS):** Implemented **Solidity** smart contracts on a local Ethereum blockchain (Ganache) to enforce an immutable, network-wide IP blacklist using Proof-of-Voting consensus.
- Full-Stack Integration:** Built a real-time automated response loop using **FastAPI** and **Web3.py**, demonstrating end-to-end automation where AI detection instantly triggers smart contract execution to block attackers.

### TradeHub – Full-Stack Trading Platform *React, Node.js, Express.js, MongoDB*

- Created APIs handling **500+** concurrent requests, achieving **99.9% uptime** during stress testing.
- Secured authentication for **100+** simulated user accounts using JWT and AES encryption.
- Engineered** a responsive React UI with Material UI, improving load times by **30% across devices**.
- Increased backend reliability by adding **50+ unit tests (Jest)** and API integration checks.

### Sign Language Detection System *Python, OpenCV, TensorFlow/Keras*

- Designed and deployed** a CNN-based deep learning model for ASL gesture recognition, reaching **98% accuracy** on a dataset of **10,000+** labeled images.
- Processed live webcam streams with **21 hand landmarks** via Mediapipe, ensuring robust tracking in varied lighting.
- Implemented a **dual-layer CNN**, boosting classification precision for similar gestures by **15%** compared to baseline.
- Enabled real-time gesture-to-text and speech conversion with **<1 second latency**, improving accessibility for hearing-impaired users.

## SKILLS

- Programming Languages:** Python, JavaScript, Java, SQL, HTML, CSS
- Frameworks & Libraries:** React, Node.js, Bootstrap, Material UI
- Core Competencies:** MERN Stack, Cybersecurity, Network Analysis, Data Structures and Algorithms, OOP
- Tools:** Wireshark, Git/GitHub, Flask, TensorFlow, OpenCV

## ACHIEVEMENTS

- Solved 200+ Data Structures and Algorithms problems on LeetCode and GeeksforGeeks.
- Competed in national-level hackathons – **Amazon HackOn**, **Adobe Hackathon**, and **Flipkart Grid 7.0** – cleared two rounds by building scalable prototypes and delivering optimized solutions under time constraints.
- Secured Top 5 position in a campus-level Capture The Flag (CTF) competition by exploiting real-world vulnerabilities.

## EXTRACURRICULAR ACTIVITIES

- Volunteered at cultural and technical events, leading coordination and logistics.
- Active member of university Cybersecurity and Technology clubs.
- Interests: financial markets, badminton, and writing technical blogs.