SHIVEK GUPTA

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EDUCATION

International Institute of Information and Technology Hyderabad, Telangana, India *Aug 2024 - July 2028*
- Bachelor of Technology, Computer Science and Engineering
- CGPA : 8.85 (Till Semester 3)

Bhupindra International Public School, Patiala, Punjab, India *Apr 2023 - Mar 2024*
- AISSCE (Class XII), Aggregate: **94.8**%

SKILLS

Proficient: C | C++
Familiar: Python | HTML | CSS | JavaScript | Unity Engine | Machine Learning | LSTM | Git | Bash Script | SQL | NoSQL

PROJECTS

Wildlife Monitoring and Poaching Prevention
- Built a connected IoT system for detecting human presence in an environment using ML models detecting human presence based on voice and images within 2 seconds.
- **Technologies**: C++, Python, YOLOv8, MQTT Protocol, ESP32.

Two Wheeler Event Detection
- Engineered a safety system node for two-wheelers that detects hazardous events (e.g., potholes, speedbumps) in real-time. Integrated an LSTM-based model with hardware sensors and a camera feed to generate immediate warnings for riders. Developed a scoring algorithm to provide an overall safety score to the rider at the end of each ride by monitoring the data collected during that ride.
- This node can impact around 3.5 lakh delivery partners in India.
- Provides live feedback and warnings to the rider with < 1 second delay.
- **Technologies**: Python, Raspberry Pi 4, Bash Script, Flutter, HTML, Vercel, Firebase.

Enhanced xv6 Operating System
- Added CFS and FCFS based scheduling to xv6.
- Added demand paging, page fault handling, FIFO replacement and per process swap area to the existing xv6 kernel.
- **Technologies**: C.

Custom Linux shell
- Developed a functional command-line interpreter capable of parsing user commands. Implemented core shell features including internal commands, foreground/background process execution, I/O redirection, and piping.
- **Technologies**: C.

Network File System
- Engineered a distributed file system in C using TCP sockets, featuring a central Naming Server and multiple Storage Servers. Implemented concurrent file access with sentence-level locking for synchronization, along with robust data persistence and efficient metadata management.
- **Technologies**: C, Linux Socket APIs.

CLI based game (Hackathon)
- Designed and built a simple multiplayer game where players choose spell cards to attack other players or heal themselves.
- **Technologies**: C, Linux Socket APIs.

Personal Website
- Designed and deployed a responsive personal website to showcase technical projects and skills. Optimized for performance and cross-device compatibility.
- **Technologies**: HTML, CSS, Javascript.

ACADEMIC ACHIEVEMENTS

Academic Honors and Awards
- **Merit List**, Semester 1 (8.78 SGPA) *Aug 2024 - Dec 2024*
- **Dean's List**, Semester 2 (9.44 SGPA) *Jan 2025 - May 2025*