SAHIL PATIL

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Education

Bharatiya Vidya Bhavan's Sardar Patel Institute of Technology　　　　　　2022 – May 2026
Bachelor of Technology in Computer Science and Engineering　　　　　　　*CGPA: 8.5*

Relevant Coursework

- Data Structures
- Algorithm Analysis
- Operating Systems
- Distributed Systems
- Database Management
- Blockchain Technology
- Computer Networks
- Cloud Computing

Technical Skills

Programming Languages: Java, Go, C, JavaScript, Solidity, SQL
Development technologies: Next.js, Express.js, PostgreSQL, MongoDB, Redis, IPFS
Developer Tools & Technologies: Docker, Git, GitHub, Linux, Nginx, Cloudflare R2, Ganache

Projects

InfinityPlay | *Next.js, MongoDB-GridFS, Ruffle*　　　　　　　　　　　**November 2024**
Source Code: github.com/Sp92535/Infinity-Play

- Built a platform enabling seamless hosting and streaming of Shockwave Flash games on modern browsers.
- Reduced game and thubnail load time by 30% using GridFS chunking and streaming.
- Incorporated Ruffle, an open-source Flash emulator, ensuring compatibility with modern browsers.
- Enabled simple process of game upload for admins and provided super admins with advance control for admin management and deletion along with authentication using Json Web Token and secured sensitive routes.

BlockChat | *Next.js, Solidity, Ganache, IPFS, Web3Auth*　　　　　　　　**January 2025**
Source Code: github.com/Sp92535/block-chat

- Engineered an Ethereum-based decentralized chat system, ensuring transparency and immutability.
- Deployed smart contracts using Hardhat Ignition modules on local Ganache blockchain.
- Implemented Web3Auth for seamless authentication and wallet-based logins via private key reconstruction.
- Leveraged Diffie-Hellman Key exchange algorithm for end to end encryption of chats and smart contract event handling via wss gateway for real time retrieval of messages on the client side.

Timeless Treasures | *Express.js, PostgreSQL, Cloudflare R2*　　　　　　**February 2025**
Source Code: github.com/Sp92535/Krackhack-Bots-Time-Capsule-2.0

- Designed a backend for a digital time capsule, enabling users to store and unlock memories over time.
- Leverage Cloudflare R2 storage for storing memories including videos, photos, and voice messages.
- Implemented user management using PostgreSQL, Json Web Token and nodemailer.
- Automated email notifications for editors and viewers upon capsule unlock via scheduled cron jobs.

ShellGhost | *Go, Bash*　　　　　　　　　　　　　　　　　　　　　**March 2025**
Source Code: github.com/Sp92535/shell-ghost

- Developed a websocket-based SSH relay to enable remote terminal access without port forwarding.
- Implemented SSH session tunneling over TLS-encrypted WebSockets, ensuring secure bidirectional communication.
- Utilized Go's concurrency model with Goroutines and Channels to optimize SSH session multiplexing.
- Deployed the WebSocket relay on a VPS and used systemd to ensure the service automatically starts, restarts on failure, and runs in the background for uninterrupted SSH access.

Achievements

- Solved over 700+ problems on Leetcode, Codeforces collectively.
- Achieved a rating of 1813 on Leetcode (top 7%).
- Achieved a rating of 1600 on Codeforces.