SENTHIL NATHAN S

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senthil nathan | senthilnathan1730 | My Portfolio

PROFILE

As a final-year Cyber Forensics student at MGR University, I'm deeply interested in cybersecurity, ethical hacking, and Linux systems. I enjoy exploring how technology works under the hood and how to protect it. I've also created a personal website, SunduVault, where I share my cybersecurity projects, tools, and experiments. I believe that security is the foundation of trust in the digital world, and I'm excited to be part of that mission.

PROFESSIONAL SKILLS

Security: Vulnerability Assessment, Penetration Testing, web Application Security

Networking: TCP/IP, OSI Layers, DHCP, DNS, Network security Protocols

Programming Languages: C, PHP, Python, JavaScript

Operating System: Linux, Windows, Android

Security Tools: IAM, VPN, DLP, Vulnerability Scanners

Version Control & Collaboration: Git, GitHub

PROJECTS

VOTECHAIN – SECURE BLOCKCHAIN-BASED ELECTRONIC VOTING SYSTEM

View Code JUL 2025 Present

🧰**Technologies Used :** HTML, CSS, Solidity, Python, Python (Flask), MongoDB / SQLite, MetaMask

📝 **Description :**

VoteChain is a decentralized and tamper-proof electronic voting system that leverages blockchain technology to ensure transparency, integrity, and security in the electoral process. The system allows registered users to cast votes through a secure interface, and every vote is stored as a transaction in a blockchain ledger. This guarantees immutability, voter anonymity, and verifiable results, making it suitable for college elections, organization polls, or small-scale government use.

🚀**Key features:**

- Blockchain-based vote storage to prevent tampering and double voting
- Immutable ledger that records each vote transparently
- Voter authentication using unique ID or credentials
- Real-time vote count visibility without compromising voter identity
- Admin dashboard to add candidates and manage election rounds
- Anonymous voting to protect voter privacy
- Web interface for voters and election managers
- Fully responsive design for mobile and desktop access

👨‍🔧**Responsibilities** :

- Designed and implemented a custom blockchain ledger for secure vote recording
- Developed voter verification and one-vote-per-user logic
- Built a web interface using HTML/CSS/Tailwind CSS for voters and admins
- Ensured vote encryption and transaction integrity
- Performed testing for vote accuracy, chain validity, and edge cases
- Documented project architecture, voting process flow, and deployment steps
- (If Ethereum) Wrote and deployed smart contracts to manage elections on a testnet

RFID BASE ATTENDENCE SYSTEM USING NODENCU

View Code Feb 2024 May 2024

🧰**Technologies Used :** HTML, CSS, JavaScript, jQuery, PHP, MySql, Arduino IDE

📝 **Description :**

The RFID-Based Smart Attendance System is an intelligent solution designed to automate and streamline attendance tracking in educational institutions and workplaces. The project leverages RFID technology integrated with a NodeMCU microcontroller to identify individuals via RFID tags. Attendance data is captured in real-time and securely transmitted to a web-based portal connected to a MySQL database for centralized monitoring.

🚀**Key features:**

Live attendance status, automated record updates, and minimal human intervention, ensuring accuracy and efficiency. The system includes a responsive HTML/CSS frontend, a PHP backend for data handling, and is deployed on a local server with options for cloud integration.

👨‍💻**Responsibilities** :

- Designed and developed the complete attendance system using RFID technology and NodeMCU.
- Built a responsive web interface using HTML, CSS, and PHP to manage attendance records efficiently.
- Integrated the RFID reader with NodeMCU to capture and transmit attendance data wirelessly.
- Set up a MySQL database to store and retrieve user and attendance information reliably.
- Implemented real-time synchronization between the hardware device and web portal.
- Handled backend logic using PHP, ensuring seamless data flow between microcontroller and database.
- Ensured data security and validation for accurate and tamper-proof attendance logs.
- Conducted thorough testing and debugging of hardware-software integration.
- Documented the project architecture, use cases, and deployment process for future maintenance and scalability.

🏆**Achievements :**

🥇 Won First Prize at the Talent Expo Project Competition conducted by Ayya Nadar Janaki Ammal College, showcasing innovative application of IoT and automation in education.

🎓 Selected to represent the college at the Anna University Regional Campus Project Expo, demonstrating technical excellence and real-world relevance of the RFID-Based Attendance System to a panel of academic and industry experts.

SECUREFILE – SECURE FILE ENCRYPTION & DECRYPTION SYSTEM (WEB & CLI)

View Live View Code May 2025 - Jun 2025

🧰**TechnologiesUsed** : Python, Flask, PyCryptodome (AES-256),HTML, CSS, JavaScript, Tailwind CSS

📝 **Description :**

SunduVault is a dual-interface (Web & CLI) application built using Python that provides robust AES-256 encryption and decryption for sensitive data files including documents (PDF, DOCX, TXT), images, and videos. The system ensures data confidentiality and security by using industry-grade encryption standards, suitable for both personal and professional use. The web version offers a user-friendly UI for non-technical users, while the CLI version provides advanced control for power users.

🚀 **Key Features:**

- AES-256 encryption/decryption support for files and folders.
- Secure handling of multiple file types: documents, images, videos.
- Web interface using Flask for non-technical users.
- CLI interface for Linux/Ubuntu systems with command-line flexibility.
- Password-protected encryption with key-based access control.
- Real-time status updates and secure file overwrite protection.
- Mobile-responsive frontend using Tailwind CSS for easy access.

👨‍💻**Responsibilities:**

- Designed and implemented AES-256 encryption and decryption logic using PyCryptodome for strong data protection.
- Developed a Flask-based web interface to allow secure file uploads and seamless encryption/decryption workflows.
- Created a Linux-based CLI tool with flexible command-line arguments and detailed logging for power users.
- Handled file type validations, error handling, and input sanitization to ensure stability and security.
- Built a responsive UI using Tailwind CSS for smooth cross-device compatibility and modern design.
- Integrated folder-level encryption support for batch encryption/decryption through both CLI and web interface.
- Tested encryption results to verify file integrity and data confidentiality across all supported formats.
- Documented system usage, installation steps, architecture, and deployment instructions for user and developer reference.

LOCKBOX – SECURE PYTHON-BASED PASSWORD MANAGER (WEB & CLI)

Jun 2025 - present

View Code

Technologies Used : HTML, CSS, JavaScript, Tailwind CSS, PyCryptodome (AES-256-CBC), Flask, argparse, colorama

📝 **Description :**

LockBox is a lightweight yet powerful password manager developed using Python that enables users to securely store, retrieve, and manage passwords across platforms. It features both a user-friendly web interface built with Flask and a command-line interface for terminal-based operations. Passwords are stored in an AES-256 encrypted local vault, ensuring high security without depending on cloud services.

🚀 **Key Features:**

- AES-256 encryption for password storage and retrieval
- Flask-based web interface with password vault and search features
- CLI tool for secure access via Linux terminal or shell environments
- Password search and categorization (email, banking, social, etc.)
- Password generator to create strong, secure passwords on demand
- Responsive web design using Tailwind CSS
- Master password login with session lock timeout
- Works offline – no external server dependency

👨‍💻**Responsibilities:**

- Designed and implemented the entire password encryption and vault system using AES-256
- Developed a web interface with Flask for adding, retrieving, and deleting passwords
- Built a CLI version for advanced users to manage passwords securely via terminal
- Implemented master password authentication and session timeout for added security
- Conducted thorough testing of encryption, vault access, and input validation
- Documented user guide, CLI usage, and security instructions for non-technical users

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SUNDU CABS – SMART ONLINE CAB BOOKING PLATFORM

Feb 2023 - Apr 2023

View Live View Code

Technologies Used : HTML, CSS, JavaScript, Tailwind CSS, Font Awesome, PHP, MySQL, XAMPP/Apache Localhost

📝 **Description :**

Sundu Cabs is a fully functional online cab booking platform designed to provide a seamless ride-booking experience for users. The system supports both Single Trip and Round Trip options with a user-friendly interface, booking confirmation, pricing calculation, and user account management. The platform is responsive and built to simulate a real-world cab service application, suitable for live demonstrations, academic showcases, or prototype use by small taxi agencies.

🚀 **Key Features:**

- User Registration & Login system with session-based access control.
- Cab Booking Options for both Single Trip and Round Trip.
- Pickup and Drop Location input with travel date & time selection.
- Dynamic Price Calculation based on trip type and car selection.
- Booking Summary Page with complete trip details and amount.

👨‍🔧**Responsibilities:**

- Designed and built the entire user system including login, registration, and session control.
- Developed booking forms for both single and round trips with dynamic data capture.
- Integrated booking confirmation flow with proper data storage and error handling.
- Designed the MySQL database schema to store user and booking data securely.
- Created a mobile-responsive layout using Tailwind CSS and tested across devices.
- Conducted functional testing for all booking scenarios and user operations.
- Implemented the user dashboard to display personalized booking records.
- Added search functionality to dynamically filter bookings in the admin/user panel.

INTERNSHIP

- **Web Development**
  (Mar- 2022 Apr-2022)
  Baboolsoft

- **Cybersecurity**
  (Jun- 2025 Jul-2025)
  Elavat Lab

EDUCATION

Post Graduate (2024-2026) Grade : 78%

Cyber Forensic And Information Security

DR. MGR Education And Research Institue, Chennai

Under Graduate (2021-2024) Grade : 66%

Computer Application

Ayya Nadar Janaki Annal, Sivakasi

HSC (2019-2021) Grade : 78%

Nadar Higher Secondary School, Watrap

CERTIFICATE / ACHIVEMENTS

Ethical Hacking - Npteal.
Microsoft AZ-900 - Microsoft.
Linux unhatached -Cisco Network Academy.
Linux Essentials - Cisco Network Academy.
Talent Expo - Anjac.

NON TECHNICAL SKILLS

- Consistency
- Logical Thinking
- Problem Solving
- Team Player
- Time Management

LANGUAGES

- English
- Tamil