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Ayush Anand

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Education

Bangalore Institute of Technology — Bengaluru, Karnataka
B.E. in Electronics and Instrumentation Engineering — *2025 – 2029*

Projects

Recsta | *React Native, Supabase, OAuth* — github.com/Recsta

- Developed a mobile social networking application using React Native, Expo, and TypeScript.
- Implemented secure authentication with OAuth and session management using Supabase Auth.
- Designed a scalable PostgreSQL database schema for users, profiles, posts, and social relationships.
- Built reusable UI components with NativeWind and optimized application performance through efficient state management.

CipherLock | *C, AES, File I/O* — github.com/CipherLock

- Developed a command-line file encryption utility in C with support for secure file encryption and decryption.
- Implemented AES-based symmetric cryptography with efficient block processing and binary file handling.
- Designed a modular cryptographic architecture separating encryption, key management, and file operations.

r2-bucket-cdn | *R2, HTML, CSS, JS, Flask, REST-API* — github.com/r2-bucket-cdn

- Built an edge CDN using Cloudflare Workers to serve assets directly from Cloudflare R2.
- Implemented intelligent caching and HTTP cache-control headers to reduce origin requests and improve latency.
- Added support for custom domains, content-type detection, and optimized asset delivery.
- Designed a lightweight serverless architecture capable of handling globally distributed traffic.

GridWatch | *Embedded C, ExpressJS, Svelte, PostgreSQL* — github.com/Grid-Watch

- Developed a full-stack IoT application for real-time electricity outage detection and monitoring.
- Implemented heartbeat-based failure detection between ESP32 devices and a Node.js backend to identify power interruptions.
- Designed a PostgreSQL database schema for storing outage events and historical monitoring data.
- Built a Svelte frontend to visualize outage metrics, enabling users to analyze grid reliability over time.

VaultC | *GO, SQLite/File Storage, Cryptography* — github.com/VaultC

- Engineered a terminal-based password manager in GO lang with encrypted credential storage.
- Implemented secure password encryption and key management to protect sensitive user data using CipherLock.
- Designed efficient data structures for credential lookup, modification, and deletion.
- Built a modular architecture separating storage, cryptography, and command processing.

Technical Skills

Languages: C, Python, TypeScript, JavaScript, HTML/CSS, Java
Frameworks: NextJS, Svelte, React Native, Flask, FastAPI
Database: PostgreSQL, SQLite, MongoDB
Cloud & DevOps: Cloudflare, Docker, Git, GitHub
Tools: Bun, VS Code, Linux
Libraries: pandas, NumPy, Matplotlib, WebSocket (ws), Spotify Web API, Discord API

Achievements

Winner: DSCE Chipverse26' 24 hour hackathon
1st Place: MAHE B'lru 24 hour hackathon
2nd Place: Project Exhibition (ISE)