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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 | *C, SQLite/File Storage, Cryptography*

- Engineered a terminal-based password manager in C 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'lu 24 hour hackathon

2nd Place: Project Exhibition (ISE)