

KUSHAGRA DWIVEDI

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EDUCATION

Vellore Institute of Technology

Integrated Masters of Technology, Computer Science with Cybersecurity

Bhopal, IN

Sep 2021 – Present

EXPERIENCE

Frontend Engineer Intern

Sep 2023 – Oct 2024

Cashin.club

Remote

- Led the end-to-end frontend development and UI/UX for a new credit card marketplace, cutting initial page load times by 40% through asset optimization and efficient rendering.
- Engineered a complete UI overhaul that simplified user navigation, resulting in a 25% decrease in bounce rate and a 15% increase in average session duration.

PROJECTS

Fullstack Parking Management Application | github.com

- A decoupled, microservices-ready application with a Vue.js frontend powered by a Python Flask backend that serves a comprehensive RESTful API with 20+ CRUD endpoints.
- Achieves fast, sub-150ms API responses by offloading heavy tasks (e.g., email) to an asynchronous Celery/Redis queue, with all communication protected by stateless JWT authentication.
- Utilizes a flexible, database-agnostic ORM (Flask-SQLAlchemy) and handles schema changes with robust, version-controlled migrations (Flask-Migrate).

Low-Level Web Server (C & Rust) | github.com

- Built two high-performance HTTP/1.1 servers from scratch in C and Rust to compare memory management paradigms.
- C Version: Handled 50 concurrent clients at <150ms latency using manual memory management validated by Valgrind.
- Rust Version: Matched the C version's performance with 30% less code while guaranteeing zero memory-safety bugs by design.

Terminal Based Spotify Controller | github.com

- Built a lightweight, Vim-style TUI in C that provides full Spotify playback control directly from the command line.
- Features over 15 custom keybindings for real-time control, achieving <100ms latency by interfacing with 7+ Spotify Web API endpoints via libcurl, all guaranteed with OAuth2 token management.

Personal Portfolio Website | [My Website](#)

- Developed a responsive, multi-page personal portfolio with 5+ distinct sections using React, React Router for navigation, and Tailwind CSS for a mobile-first design.
- Optimized the build for performance, achieving a 95+ Lighthouse score for speed and accessibility. Deployed to GitHub Pages with a custom domain and managed the entire build-and-deploy pipeline from the Git CLI.

Home Lab

- Deployed a 24/7 home lab on a Linux laptop, hosting 4+ containerized services with Docker/Docker Compose. Key services include a 1TB+ Samba share, a media server capable of 2x 1080p hardware transcodes, Nextcloud, and Vaultwarden.
- Secured all services for remote access via a custom domain using a Cloudflare Argo Tunnel. This architecture proxies all ingress traffic and requires zero open inbound ports on the firewall, establishing a true Zero Trust security model.

SKILLS

Professional Skills: Web Development, DevOps, Systems Engineering, Linux, Backend Development, Software Development, SQL, Cloud Operations, Active Directory, Graphic Design

Languages/Frameworks: React, Svelte, Solid, Vue, Node, TypeScript, FlaskAPI, Python, C/C++, Lua, Vimscript, Django, Java, Typst, Rust, Docker, Kubernetes, AWS