Shagnik Paul

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PROFILE

Currently in the 3rd year of my Computer Science degree at VIT Vellore. I have a strong interest in developing web applications and exploring innovations in web technologies. I also enjoy solving data structure and algorithm problems, as well as puzzles using DSA concepts. I consider myself a dedicated, hard-working, and committed team member.

EDUCATION

Vellore Institute of Technology (VIT) — Vellore, India
B.Tech in Computer Science and Engineering (IoT Specialization), CGPA (4th Semester): 9.36 — *Expected Apr 2027*

St. Joan's School (CISCE) — Kolkata, India
Class XII – 95.75%   —   Class X – 96.2% — *Apr 2022*

PROJECTS

Unity Help (Full Stack Web App – React + Firebase) | Github — 2025
- Individually developed a volunteer-help platform that connected 20+ test users, where normal users posted requests and volunteers signed up to assist.
- Built the frontend with **React**, **Chakra UI**, and **Tailwind**, ensuring responsive design with less than 1 second average load time across devices.
- Integrated **Firebase Authentication** with Google sign-in, enabling seamless and secure login for all users.
- Configured **Firebase Firestore** to store and manage 100+ user posts, volunteer profiles, and task records with real-time sync which were generated using test data.
- Implemented email notifications via **Brevo's JavaScript SDK** to:
  * Notify users when volunteers accepted their tasks (10+ notifications tested), sharing volunteer contact details.
  * Send automated thank-you messages to volunteers upon task completion, improving user engagement.

Automated Toll Collection System (Full Stack Web App) | Github — 2024
- Collaborated in a 3-member team project to automate toll collection using an Arduino + camera setup, successfully detecting 50+ test vehicles and capturing license plate images for billing automation.
- Built a backend with **FastAPI** and **MongoDB** to process 500+ license plate records, applying **EasyOCR** with 90% accuracy after filtering irrelevant text, and logging toll entries with time, location, and fee.
- Developed a frontend in **React** with **Chakra UI**, achieving near real-time updates using TanStack Query.
- Designed a dashboard to display recent vehicles, full toll history, and QR codes for details, enabling quick access to cumulative bills.

TECHNICAL SKILLS

Core CS Concepts: Data Structures and Algorithms, Database Management Systems, Object-Oriented Programming
Programming Languages: Java, JavaScript, Python, C++, C
Frontend: React, Shadcn Components, Chakra UI, Next.js, HeroUI, Flowbite, HTML, CSS
Backend: Flask, Django, Express.js, FastAPI, Node.js, Supabase, Firebase, MongoDB

EVENTS PARTICIPATION

Yantra Central Hackathon | *Backend Developer & UI/UX Designer, Team of 5* | Certificate Link — March 2025
- Collaborated in a 36-hour hackathon with a 5-member team to build a Flutter app for waste classification, enabling users to exchange recyclables at nearby centers for rewards.
- Designed a modern and user-friendly UI/UX prototype in **Figma**, consisting of 8 connected screens for core app functionality.
- Developed the backend with **Flask** and **MongoDB**, implementing 10 REST API endpoints (CRUD operations + custom queries) for data and image handling, integrated with an ML model for waste classification and secured with **Supabase** authentication.

CERTIFICATIONS

Full Stack Web Developer Bootcamp (Udemy) | *by Colt Steele* | Certificate Link — 2024 - 2025

LANGUAGES

English (Fluent), Hindi (Fluent), Bengali (Native)