Alapan Das

+91 9088969456 | alapandas2810@gmail.com | Linkedin | Github | Portfolio

PROFILE

Final-year Information Technology student with strong skills in programming, systems management and problem solving. Known for adaptability, attention to detail, time management, and effective team collaboration. Eager to apply academic learning to real-world IT challenges and contribute to impactful solutions.

TECHNICAL SKILLS

Programming Languages: C++, Core Java, C, Python, Javascript
Database: MySQL, Oracle, MongoDB
Web Technologies: HTML, CSS, Node.js (Beginner), React.js (Beginner)
Version Control System: Git, Github
Development Methodologies: Agile, Scrum, Kanban, Prototype, Spiral

INTERNSHIP

IBM SkillsBuild Internship   *June-Aug'24*
- Front End Web Development Task in **FoodWise**

ACHIEVEMENTS

Smart Bengal Hackathon (Finalist)   *May'25*
- Project: AI-Powered Smart Traffic Management System

PROJECTS

AI Traffic Management System (Group Project)   **(Github Repository)**

Flask, PyTorch, OpenCV, Flask-SocketIO, NetworkX, RESTful APIs

- Developed a real-time smart traffic light system using **DQN** and computer vision to optimize signals based on live traffic.
- Used **PyTorch** for video-based traffic density classification, dynamically adjusting signal timings.
- Developed **RESTful APIs** and **WebSocket** endpoints for live updates, route suggestions, and interactive dashboards.
- Implemented an alternate route engine with **NetworkX**, leveraging real-time data to reduce congestion.
- Enabled multi-intersection synchronization and live route weight updates for robust traffic control.
- Ensured seamless backend-frontend interaction via **Flask-SocketIO** and real-time video streaming.

Driver's Drowsiness Alert System (Group Project)   **(Github Repository)**

Python, Flask, OpenCV, Dlib, eSpeak, NumPy, Imutils, HTML, CSS

- Developed a system that detects driver drowsiness and alerts drivers to avoid accidents.
- Developed a real-time drowsiness detection system using **OpenCV**, **Dlib**, and **Flask** for live facial monitoring.
- Implemented facial landmark detection and eye movement tracking to identify driver fatigue and trigger alerts.
- Designed a web-based application with **Flask** to provide a user-friendly interface for seamless accessibility.
- Integrated multi-threaded alert mechanisms using Python's threading module to issue real-time voice alerts.

FoodWise: Food Wastage Solution (Group Project)   **(Github Repository)**

MongoDB, Express.js, Node.js, JWT, and RESTful APIs

- Designed API routes, securing authentication with **JWT**, and structuring efficient database schemas.
- Implemented JWT with access and refresh tokens to enhance **security**, **session management** and **prevent unauthorized access.**
- Resolved backend-frontend integration issues by properly formatting response data for smooth interaction.
- Optimized API performance and secured user data with **bcrypt-based authentication.**

EDUCATION

B.Tech in **Information Technology** from *University of Calcutta* (**CGPA:** 8.15)   2023-Present
B.Sc in **Computer Science (Hons.)** from *University of Calcutta* (**CGPA:** 8.379)   2020-2023
Higher Secondary Education (*W.B.C.H.S.E*)(**Percentage:** 88.4%)   2020
Secondary Education (*W.B.B.S.E*)(**Percentage:** 87.4%)   2018