

HENOK WEHIBE

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WORK EXPERIENCE

MicrometeUK

Lead/Full stack developer

2022 - 2024

- Led the development of an Automatic Number Plate Recognition (ANPR) as a service project.
 - Automated vehicle identification and parking enforcement.
 - Reduced cost by using cloud infrastructures.
- Designed a Python/Flask backend with Redis and a React frontend.
 - Developed a new user interface with React, enhancing user experience and responsiveness.
 - Integrated the React frontend with Python/Flask backend using RESTful APIs.
- Developed Ansible roles to automate deployment across multiple environments.
 - Automated the deployment of the React frontend and Python/Flask backend using Ansible roles, enabling continuous integration and delivery.
 - Eliminated manual configuration errors and ensured consistent deployments across all environments.
- Leveraged Redis with SSE(Server-Sent Events) to provide instant updates without the need for constant page refreshes.
 - Implemented a Redis Pub/Sub channel to broadcast parking activity updates from the backend.
 - Developed an SSE endpoint in the Python/Flask backend to push updates to connected clients.
 - integrated client-side JavaScript/React to handle incoming SSE events and update the user interface dynamically.
- Developed cross-platform desktop applications with Electron and mobile apps with Ionic Framework, seamlessly integrating them with the ANPR Flask backend.
 - Utilized RESTful APIs to enable communication between the Electron/Ionic apps and the Flask backend, facilitating real-time data exchange and ANPR functionality.
 - Leveraged Electron and Ionic to create native apps for multiple platforms (Android), expanding the reach of the ANPR service and increasing user accessibility.
- Built a low-power SoC IoT camera using an Arduino ESP32, integrating a camera module for video capture and transmission to the ANPR system
 - Designed the hardware and firmware for a SoC IoT camera using an ESP32 microcontroller, integrating a camera module for video capture and Wi-Fi for network connectivity.
 - Leveraged the ESP32's built-in Wi-Fi capabilities to enable wireless video streaming.
 - Integrated the camera with a cloud platform for remote access, live streaming, and storage of video footage
- Integrated real-time video streaming using FFmpeg and OpenCV into the ANPR system.
 - Utilized FFmpeg and OpenCV to create a video streaming pipeline that feeds live footage into the ANPR system for immediate number plate recognition