HENOK WEHIBE

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WORK EXPERINCE

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.
- Increased system reliability and reduced downtime through automated configuration management with Ansible.

· 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.

· Utilized pandas to clean and process ANPR data, removing duplicates, correcting errors, and standardizing formats for subsequent analysis

- Improved the accuracy of ANPR data analysis by cleaning and processing the data with pandas.
- Facilitated data sharing by exporting processed ANPR data to CSV, Excel, and JSON formats using pandas.

· 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, enabling continuous monitoring and analysis of vehicle traffic.

- Utilized FFmpeg and OpenCV to create a video streaming pipeline that feeds live footage into the ANPR system for immediate number plate recognition
- Leveraged FFmpeg to efficiently encode and stream video data from the ESP32 camera to the ANPR system, minimizing latency and bandwidth consumption

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Freelance/Self Employed
Web Devloper *2020 - 2022*

· Developed e-commerce websites, landing pages, and blogs for clients across various industries leveraging WordPress and React.

- Provided a comprehensive suite of services, including domain registration, email hosting, website design and development, and ongoing website maintenance.
- Offered custom website solutions tailored to clients' needs, from initial concept and design to development, deployment, and search engine optimization.
- Improved website loading speeds by utilizing Edge Computing Hosting and optimizing website performance.
- Performed comprehensive website audits encompassing performance, accessibility, best practices, and SEO, utilizing tools like Google Lighthouse.

project
Home Laboratory *2017 - 2020*

· Customized Debian/Linux distributions to create specialized versions for desktops, laptops, and servers, including pre-installed software and custom branding

- Utilized remastering tools and scripts to create customized Debian/Linux distributions.
- Manually configured and optimized Debian/Linux distributions to meet specific performance and security requirements for desktops, laptops, and servers.
- Hosted and maintained Gitea instances on cloud platforms (AWS, Azure, GCP) for private source code management, ensuring high availability, security, and performance
- Established a private Docker Registry to securely store and manage Docker images for internal projects, ensuring controlled access and efficient distribution