

# HENOK WEHIBE

henokwehibe@gmail.com

<https://linkedin.com/in/henokwehibe>

<https://github.com/micrometre>

## SUMMARY

*Highly motivated and experienced full-stack developer with a proven track record of success in designing, developing, and deploying web applications. Proven ability to leverage a wide range of technologies to create innovative and user-friendly solutions. Expertise in both front-end and back-end development, with a strong understanding of cloud technologies and DevOps practices.*

## WORK EXPERIENCE

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MicrometeUK

Lead/Full stack developer

2022 - 2024

Led the development of an Automatic Number Plate Recognition (ANPR) as a service project.

- Automated the manual data entry of number plate presence, eliminating human error and significantly improving efficiency.
- Developed a system that automates vehicle identification and parking enforcement by integrating ANPR technology with existing parking management software.
- Reduced infrastructure costs by migrating on-premises servers to AWS cloud services, leveraging EC2 instances for compute, S3 for storage, and RDS for databases.

Designed a Python/Flask backend with Redis and a React frontend.

- Integrated the React frontend with Python/Flask backend using RESTful APIs.
- Developed a user interface with React, enhancing user experience and responsiveness.

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

- 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

- 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

- 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 Developer*

*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.
- Implemented features like store locators, custom map markers, and dynamic zoom levels using the Google Maps API within the WordPress theme.

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## Projects

*2017 - 2020*

1. 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.
  - Built custom images using Packer to create consistent and reproducible development and testing environments, eliminating configuration inconsistencies.
  - Configured KVM, QEMU, and Vagrant on host machines to create a versatile virtualization environment for running multiple VMs, enabling efficient development, testing, and deployment of applications

- 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
- Implemented Nginx as a reverse proxy to handle incoming requests, caching static content, and routing traffic to appropriate backend servers.
- Enabled SSL termination with HAProxy and Nginx to secure web traffic and protect sensitive data.
- Developed an Ansible role that automates the installation and configuration of WireGuard, enabling rapid and secure deployment of VPN servers and clients.
- Implemented Fail2ban to protect critical services (SSH, WordPress, Gitea) from brute-force attacks.
- Integrated Monit, Crontab, and Git to create a comprehensive monitoring system.  
Monit actively monitors system resources and services.  
crontab schedules regular checks.  
Git tracks configuration changes for auditing and rollback capabilities.
- Installed and set up Kubernetes clusters using kubeadm and Microk8s for deploying and managing containerized applications.  
Configured network plugins Calico and Flannel to enable communication between pods and services within the Kubernetes cluster.  
Deployed Nginx Ingress Controller on Kubernetes and configured it with Let's Encrypt certificates using Cert-Manager, enabling secure HTTPS access to applications  
Reduced Docker image build times and cost by implementing a private registry.

## TECHNICAL TOOLS AND SOFTWARE

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<b>Configuration management</b>	Ansible
<b>Container orchestration</b>	Kubernetes
<b>Cloud Technologies</b>	AWS, GCP and Azure
<b>Languages</b>	Python and Javascript
<b>Databases</b>	MySQL, Redis and Monogodb
<b>Version Control</b>	Git
<b>Testing Framework</b>	Cypress

## ONLINE CERTIFICATES AND COURSES

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<b>FreeCodeCamp</b>	Responsive Web Design
<b>FreeCodeCamp</b>	JavaScript Algorithms and Data Structures
<b>Google Career Certificates</b>	Crash Course on Python
<b>Codecademy</b>	Learn Python
<b>Codecademy</b>	Bash/Shell
<b>Kaggle</b>	Intro to Programming
<b>Coursera</b>	Introduction to Programming with Python and Java Specialization

## EDUCATION

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*South Thames College*  
**Diploma, Information technology**  
**GCSE Triple Science in Biology, Chemistry, and Physics**  
**GCSE English, and Maths**

*1993 - 1997*