HENOK WEHIBE

henokwehibe@gmail.com

https://linkedin.com/in/henokwehibe

https://github.com/micrometre

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.

Caveat!

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.

Caveat!

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.

Caveat!

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.
- Utilized Redis's HSET data structure to efficiently store and manage ANPR license plate data, enabling fast lookups and efficient data retrieval for real-time applications
- 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.

Caveat!

· 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 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.

Projects
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.
- 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

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

ONLINE CERTIFICATES AND COURSES

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

EDUCATION

South Thames College *1993 - 1997*
Diploma, Information technology
GCSE Triple Science in Biology, Chemistry, and Physics
GCSE English, and Maths

Topic

First Subtopic

First Sub-Subtopic

1. The labels consists of sequential numbers
   - The individual entries are indicated with a black dot, a so-called bullet
   - The text in the entries may be of any length

     Note: I would like to describe something here

     Caveat! And give a warning here
2. The numbers starts at 1 with each use of the `enumerate` environment