KAR WAN LEONG

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Summary

- Started as a web dev (2018-2019), transitioning to Python/C++ development (2020-2024) / computer vision, currently (2025) exploring embedded system, AI/LLM, and more React / Django / modern web technology.
- Developed diverse projects/tools/libraries including a new Windows driver, Python library, Godot, Flutter app, and Next.js landing page.
- Continuously expanding knowledge through self-learning AI/ LLM, reinforcement learning.

Education

Universiti Tunku Abdul Rahman (UTAR)

Master of Engineering Science *Sept 2019 – Jan 2024*

- **Dissertation**: License Plate Detection Using Deep Learning Object Detection Models

Bachelor of Computer Science (Honours) *May 2014 – May 2019*

- **FYP**: Quiz Web Application Using Angular and MySQL

Experience

Freelance | Programmer *Mar 2020 – Aug 2024*

- Developed algorithms/solutions using computer vision technology to solve client's problem.

Inventech | Software Engineer Intern *Oct 2018 – Dec 2018*

- Designed and implemented front-end and back-end solutions using Angular and .Net Core.
- Developed SQL queries to optimize data extraction efficiency, enabling real-time visualization of product metrics within the factoring monitoring system.

Projects

License Plate Detection Using Deep Learning Object Detection Models (Dissertation)

- Fine-tuned YOLOv4, EfficientDet, CenterNet, Faster R-CNN, and SSD models on the CCPD License Plate dataset (100,000+ images).
- Improved YOLOv4 accuracy by 13.32% on the CCPD License Plate dataset through custom convolution layers and optimized preprocessing

WinRT Windows Graphics Capture Library

- Developed high-performance screen capture tool using WinRT, compiled into a DLL and integrated with Python using ctypes.

KMDF Keyboard Filter Driver

- Created a Window Kernel-Mode Driver Framework (KMDF) driver for keylogging and user-mode keystroke injection.

Various Tools Using Computer Vision

- Built multi-threaded, high-performance automation systems with OpenCV, YOLOv10, Boost, and Raspberry Pi. Developed user-friendly Windows applications using PySide6 and MVP architecture.

Skills & Tools

Languages	Python • C/C++ • Javascript • HTML/CSS • Typescript • Dart
Frameworks/Tools	FastAPI • PyQt6 • PySide6 • Git • OpenCV • Numpy • Boost • YOLO • Tensorflow • Pytorch • ROS • React.js • Next.js • Tailwindcss • Flutter • Django • Docker • Godot
Systems & Platforms	Windows • Ubuntu • Arch Linux • Raspberry Pi • VMware
Dev Tools	Git • Github • Vim • SQL • MongoDB • PostgreSQL

Languages

English, Mandarin, Malay