Xinyang Bao

Tel: +852 60923853

https://www.linkedin.com/in/theoxyb/

Email: u3595298@connect.hku.hk

EDUCATION

The University of Hong Kong, Bachelor of Engineering in Computer Engineering   Sept. 2021 – Jul. 2025
- Awarded HKU Undergraduate Entrance Scholarship for Outstanding Academic Talents (2021-2025)

The University of Hong Kong, Master of Science in Electrical and Electronic Engineering   Sept. 2025 – Dec. 2026

PROJECT EXPERIENCE

Pupu, iOS Application (Vibe Coding)   Dec.2025

Built a SwiftUI iOS app for tracking personal bowel movement patterns with calendar visualization and trend analytics. Implemented a lightweight SQLite database for secure local health data storage. Plan to test on TestFlight.

Ora, Web Application   June. 2025 – Present

Developing an AI chat web application, by applying LLM, TTS, and STT, features on text and oral conversation and reorganize the history conversation into a coherent story.
- React, Flask, MySQL, Redis

HKU ELEC3234 Computer and Communication Network Project, *Game Hall Application*   Sep – Oct. 2024

Designed and implemented a game house application using Python socket programming for computer networks.
- Comprised a server program and a client program where multiple clients connect to a game server, authenticate themselves, and participate in playing games in different rooms.

HKU ELEC3848 Integrated Project Design, Group Project, *Dogbot*   Mar – Apr. 2024

A robot dog developed on Nvidia Jetson Nano and Arduino Mega2560 board, equipped with ROS2, capable of avoiding obstacles, self-patrolling to find specific objects, object detection and grabbing and voice control.
- Responsible for using object detection to grab an object and voice control.
- Object detection: Took 100 pictures to train the SSD model; according to the output of the model, designed an algorithm to automatically control a robotic arm to grab the detected object.
- Voice control: Used iPhone Siri for voice detection and Shortcuts for building communication between iPhone and the Jetson nano that can control the Dogbot to move, grab items and give response to human calling.

HKU ELEC3342 Digital System Design, Group Project, *Music Code Decoder*   Sept – Nov. 2023

Used VHDL in Vivado to build a hardware receiver for innovative communication protocol according to given requirements.
- Responsible for symbol detection and music code decoding.
- Music code decoding: according to the characteristics of different frequencies of music notes; designed an algorithm which can start and end decoding with BOS and EOS sequence.
- Symbol detection: based on zero cross detection to measure the input frequency; transmitted frequencies to corresponding symbols if frequencies were in acceptable ranges.
- Achieved 100% accuracy in simulating the whole system and approximately 90% accuracy when implementing the system on actual FPGA board.

HKU ENGG1340 Computer programming II, Gluttonous Snake   Mar – Apr. 2022

Built a C++ interactive terminal game where players control a dynamically growing snake to collect letters and spell words across 10 increasingly difficult levels.
- Implemented randomized map generation, real-time keyboard input using *termios*, modular multi-file architecture, vector-based dynamic memory management, and persistent save/load functionality through file I/O.

WORKING EXPERIENCE

HKU Tam Wing Fan Innovation Wing, Part-time Teaching Assistant   Sept.2025 – Present
- 3D printing (Bambu Lab X1C, H2D), Laser cutting, Innowing tour leading.
- Developing an HKU Innovation Wing voice chatbot with RAG, improving the speaking recognition part.

Ipsos, Synthesio Department, *Social Media Listening Intern (Shanghai, remote)*   Jun.2025 – July.2025
- Scraped and collected data from target websites for data aggregation and analysis.

HKU, DASE, *Transportation & Logistics Analyst Project Summer Intern (Hong Kong)*   Jun – Aug. 2024

Developed a system for transportation detection, analysis and storage data. The project cooperates with Hong Kong government and other companies.
- Responsible for the automated workflow development for the system and model training

- Automated workflow development: including retrieving the input videos, using YOLOv8 to analyze these videos and merging the output into json files which will be further delivered to the database.

Wine's Link, *Information & System Control Department Intern (Hong Kong)* Aug. 2023

EXTRACURRICULAR ACTIVITY

HKU Beyond the Pivot (BTP) Go2Africa Dec. 2023 – Aug. 2024

A volunteering team with a total of 250 members on the Board of Directors and 900 volunteers participating in programs.

- Led a 10-volunteer group which may go to Ghana in the next year; tasks including volunteers' interview, communicate with the Ghana NGO, donations collection.

SKILLS & OTHERS

- **Computer and Programming Skills**: Python (Skilled in PyTorch, Numpy, Sklearn, Matplotlib…), C, C++, VHDL, MATLAB (Simulink), ArcGIS Pro, Latex
- **Language**: English(fluent), Cantonese(beginner), Chinese(native)