

# Hill Choy

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## SUMMARY

I am a recent graduate with a degree in Computer Engineering from HKUST. I am currently working as a Research Assistant at HKUST (Department of Computer Science and Engineering). My research interests primarily lie in the area of Machine Learning / Artificial Intelligence and its practical applications, with a particular focus on computer vision and the application of Machine Learning / Artificial Intelligence in real-world scenarios. I am currently seeking further studies, research or work opportunities in any of the aforementioned areas.

## EDUCATION

**Hong Kong University of Science and Technology (HKUST)**

BEng in Computer Engineering

Graduation: July 2024

## Achievements

**IELTS Academic**

Score

8 (Out of 9), (R:8.5,L:9,W:7,S:7)

**TOEFL iBT**

Score

103 (Out of 120), (R:30/30,L:30/30,W:24/30,S:19/30)

## PROJECT

**Project title**

**Supervisor**

**Advanced Video Analytics and Edge AI for Smart Carpark Systems**

**Dr. Gary Shueng-Han CHAN**

- In this project, we aim to develop a smart carpark system that utilizes edge AI to provide real-time parking space availability. The goal of the system is to build a system that is capable of informing drivers of available parking spaces while minimizing the computational, installation, and maintenance costs of the system.
- The project involves the use of the latest object detection model, YOLOv8, with MobileNetV3 backbone structure, to design and train a model capable of detecting the presence of vehicles in parking spaces. This model can be deployed on the edge devices with limited computational power (Raspberry Pi) to capture and determine if a parking slot is empty or occupied. The project also involves the design and building of backend system structure and the use of LoRaWAN technology to transmit the parking space availability information.
- More details about the project can be found at: <http://eek123.ust.hk/SmartCarpark/>

## Courses and Skills

These courseworks have provided me with a foundation understanding in the theoretical and practical aspects in Machine Learning and Artificial Intelligence fields. I have also gained experience in algorithm design and analysis, and a basic understanding of computer networks.

- **COMP 4221:** Introduction to Natural Language Processing.
- **COMP 4332:** Big Data Mining and Management.
- **COMP 4222:** Machine Learning with Structured Data.
- **COMP 4621:** Computer and Communication Networks.
- **Skills:** Python, C++/C, SQL, Linux, TensorFlow, PyTorch, LoRaWAN, STM32 and Arduino Platform.

## EXPERIENCE

**HKT/PCCW, Fixed Networks Operation - ISPC (CFM/CDM)**

**Intern**

- Responsible for upgrading internal tools to improve the efficiency of the department's daily operations.

**HKUST, CSE - Professor Gary Chan's Research Group**

**Research Assistant**

- Currently developing and deploying Smart Monitoring Projects utilizing computer vision techniques for car and people flow analysis, and assisting with Human Pose Recognition initiatives.