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. I am currently seeking further studies, research or work opportunities.

EDUCATION

Hong Kong University of Science and Technology (HKUST)
BEng in Computer Engineering (***Second Class Honors, Division 1***) *Graduation: July 2024*

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

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

RESEARCH EXPERIENCE

1. Advanced Video Analytics and Edge AI for Smart Carpark Systems
Hong Kong University of Science and Technology
Bachelor Degree Final Year Project (*Supervisor:* ***Prof. Shueng-Han Gary Chan, CSE Department, HKUST***)

- Developed a smart car park system that utilizes edge AI to provide real-time parking space availability. It is capable of informing drivers of available parking spaces while minimizing the computational, installation, and maintenance costs of the system.
  - Utilized **SOTA** You Only Look Once (YOLO) series models for the detection of cars.
  - Implemented a MobileNetV3-based backbone in YOLOv8 to reduce the number of parameters while maintaining optimal performance.
  - Utilized the LoRaWAN network to reduce the overall costs of network equipment installation and development.

PROFESSIONAL EXPERIENCE

Hong Kong University of Science and Technology **Hong Kong**
Research Assistant (***Department of Computer Science and Engineering***) *08/2024 - Prsent*

- Developed computer vision-based solutions using **SOTA** YOLO series models to meet the various needs of different projects.
- Developed web applications using Python and Flask for processing and displaying information acquired from Object Detection/Instance Segmentation/Human Action Recongnition results.
- Optimized models and application pipelines to deploy computer vision models on devices with limited computing power and low bandwidth scenarios.
- List of Projects:
  - K11 MUSEA Cars and Pedestrian Flow Monitoring System (**Ongoing**)
    - Monitor real-time traffic and pedestrian flow in key areas of the business-mall complex.
    - Provide property management with daily, weekly, monthly, and yearly reports to facilitate management.
    - Currently deployed and running on-site in the trial phase to test its overall stability.
    - Responsible for the training of models and development of AI scripts, backend systems, and the web frontend.
  - Privacy-Preserving Elderly Monitoring with a Novel Edge AI Camera
    - Monitor patients/elderly daily using privacy-conserving technology and alert staff if a patient or elderly person falls.
    - Currently in the trial phase and deployed in an elderly home and 30 solidarity elderly flats.
    - Recipient of the **Hong Kong ICT Awards 2024, Smart People (Smart Ageing) Silver Award**.
    - Responsible for data visualization and creating Python scripts to generate daily reports for patients and the elderly.
    - Assisted in the deployment of the system in elderly homes in Hong Kong.

Hong Kong Telecom **Hong Kong**
Intern (***Fixed Networks Operation - Integrated Service Provision Center***) *06/2023 - 07/2024*

- Upgraded internal tools with Python to improve the efficiency of the department's daily operations.
- Assisted in the development and integration of an AI chatbot for training purposes, providing answers based on standard flow instructions for employees within the department.

ADDITIONAL

- **Languages**: Cantonese(Native), Mandarin(Basic), English(Fluent), Japanese(Foundation)