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MPhil Year 2 Student
Aeronautical and Aviation Engineering
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EDUCATION

• **The Hong Kong Polytechnic University (HKPolyU)**　　　　　　　　　*2022-now*

Master of Philosophy (Passed Confirmation of Registration)
- Thesis title: Design and Control of a Soft Aerial Vehicle for Conducting Aerial Grasping
- Supervised by Prof. Chih-yung WEN (AAE) and co-supervised by Dr Henry K. CHU (ME)
- affiliated with the High-speed Thermo-fluid and MAV/UAV Lab (AIRo Lab) at the Research Centre for Unmanned Autonomous Systems (RCUAS)

• **The Hong Kong Polytechnic University**　　　　　　　　　*2018-2022*

Bachelor of Engineering (Honours) in Mechanical Engineering
- Dean list (2019/2020)
- FYP title: Development of an Aerial Air Quality Monitoring Platform Based on Vertical Takeoff and Landing (VTOL) Unmanned Aerial Vehicle (UAV) (Supervised by Prof. Chih-yung WEN)
- Virtual summer exchange: Girton College, Cambridge - Mathematics for Engineering Online Summer Programme, 2021

PUBLICATION

- **H. C. Cheung**, C.-W. Chang, B. Jiang, C.-Y. Wen, and H. K. Chu, "A modular pneumatic soft gripper design for aerial grasping and landing," **2024 IEEE 7th International Conference on Soft Robotics (RoboSoft)**, San Diego, CA, USA, 2024, pp. 82-88, doi: 10.1109/RoboSoft60065.2024.10521918.
- C.-W. Chang, L.-Y. Lo, **H. C. Cheung**, Y. Feng, A.-S. Yang, C.-Y. Wen, and W. Zhou, "Proactive guidance for accurate uav landing on a dynamic platform: A visual– inertial approach," **Sensors**, vol. 22, no. 1, p. 404, 2022.

AWARDS AND SCHOLARSHIP

• **HKSAR Government Scholarship Fund - Endeavour Merit Award**　　　　　*2018/19 - 2023/24*

• **The Hong Kong Jockey Club Scholarships – Undergraduate Scholarship**
 - The Hong Kong Jockey Club　　　　　　　　　*2019/20 - 2021/22*

• **BEA Inspiring Student Scholarship**
 -Bank of East Asia　　　　　　　　　*2019/20*

• **Best Engineering Design Award** The Robocon 2019 Hong Kong Contest
 - Hong Kong Science and Technology Parks Corporation　　　　　　　　　*2019*

• **HKSAR Government Scholarship Fund - Talent Development Scholarship**　　*2018/19 -2019/20*

• **Two Champion; Four 1st Runner-up; Three 2nd Runner-up** International Robotic Olympic 2017
 - Hong Kong Robotic Olympic Association　　　　　　　　　*2017*

• **(Senior Group) Second Prize; Best Design Award** Fun Science Competition 2017 "Stay right there"
 - Hong Kong Science Museum　　　　　　　　　*2017*

• **Hong Kong Top 10 Outstanding Teens Award** Hong Kong Outstanding Teens Election
 - Hong Kong Playground Association　　　　　　　　　*2016*

WORK EXPERIENCE

• **The Hong Kong Polytechnic University**　　　　　　　　　*May 2023 - now*

Project Technical Assistant (Part-time) | Supervisor: Prof. Chih-yung WEN　　　　MAV/UAV Laboratory
 – Has associated with the research project "Research Centre for Unmanned Autonomous Systems" (P0046487)
 – Providing technical support for 3D printing
 – Providing technical support for mechatronics design

• **Hong Kong Center for Construction Robotics**　　　　　　　　　*Jan 2023 - Jun 2023*

Research Assistant (Part-time)
 – Provided technical support for 3D printing
 – Designed the mechanical structure of products and drawing the 3D CAD drawings

• **The Hong Kong Polytechnic University**　　　　　　　　　*Sep 2022 - May 2023*

Project Assistant (Part-time) | Supervisor: Prof. Chih-yung WEN　　　　MAV/UAV Laboratory
 – Had associated with the research project "Research Centre for Unmanned Autonomous Systems" (P0046487)

– Provided technical support for composite manufacturing (Carbon fiber airframes)
– Provided technical support for 3D printing

- **Hong Kong Center for Construction Robotics** *Jun 2022 - Aug 2022*
Student Helper (Full-time)
  – Joined one of the existing start-up teams, which is focusing on construction robots
  – Designed the mechanical structure of products and drawing the 3D CAD drawings

- **The Hong Kong Polytechnic University** *Aug 2021 - May 2022*
Student Assistant (Part-time) | Supervisor: Prof. Chih-yung WEN MAV/UAV Laboratory
  – Had associated with the research project "Trial: Development of Vertical Take-Off and Landing (VTOL) Unmanned Aerial Vehicle (UAV) for Air Quality Monitoring in Greater Bay Area" (K-ZPJU)
  – Provided technical support for 3D printing
  – Designed the mechanical structure of a movable landing platform for UAVs and controlled its movement with Arduino programming

- **The Hong Kong Polytechnic University** *Dec 2020 - Jul 2021*
Student Assistant (Part-time and Full-time) | Supervisor: Dr Henry Kar Hang CHU Biomimetic Robotics Laboratory
  – Automated pick-and-place task with object recognition using deep learning
  – Applied vision-based control for a robot arm (UR5) and conducted system calibration to ensure precise control
  – Incorporated deep learning techniques, specifically Convolutional Neural Networks (CNN), for grasping random objects

Extra-curricular Activities

- **Judge and Organizer,** Hong Kong Robotics Club *Apr 2018 - now*
  – Demonstrated judgment in the Hong Kong Robotic Olympiad and International Robotic Olympiad
  – Contributed to the preparation and event follow-ups

- **Leader of the Team, Crimson,** HKPolyU FENG Robotics Club *Oct 2018 - Oct 2019*
  – Chief designer of Manual Robot 1 (A multi-tasking robot with several types of actuators)
  – Designer of the rack of compressed air tank for pneumatic cylinders
  – Won Best Engineering Award in the Robocon 2019 Hong Kong Contest

Technical Skills and Interests

Languages: English, Cantonese, Mandarin
CAD & CFD: AutoCAD, CorelDRAW, Fusion 360, SOLIDWORKS, Ansys Fluent
Programming language libraries & Frameworks: Arduino, C++, Python, ROS, OpenCV, ArduPilot, PX4, TensorFlow