

# CHEUNG Hiu Ching, Athena

Master of Philosophy

Aeronautical and Aviation Engineering

The Hong Kong Polytechnic University

🏠 <https://athenachc.github.io/>

✉ [athena-hiu-ching.cheung@connect.polyu.hk](mailto:athena-hiu-ching.cheung@connect.polyu.hk)

🌐 <https://github.com/HKPolyU-UAV>

🌐 [www.linkedin.com/in/athena-cheung-chc](https://www.linkedin.com/in/athena-cheung-chc)

## EDUCATION

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### • The Hong Kong Polytechnic University (HKPolyU)

2022-now

*Master of Philosophy (Passed Confirmation of Registration)*

CGPA: 3.48/4.30

- 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 MAV/UAV Lab (AIRo Lab)

### • The Hong Kong Polytechnic University

2018-2022

*Bachelor of Engineering (Honours) in Mechanical Engineering*

GPA: 3.50/4.30

- 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)

- Computer Programming (C++): A+; Engineering Management: A; Engineering Design: A

## PUBLICATION

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- **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," <http://arxiv.org/abs/2311.00390> (preprint, submitted to **IEEE RoboSoft 2024**)
- 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

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### • HKSAR Government Scholarship Fund - Endeavour Merit Award

2018/19 - 2022/23

### • 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

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### • 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

- Applied vision-based control for a robot arm (UR5)
- Conducted system calibration to ensure precise control
- Incorporated deep learning techniques, specifically Convolutional Neural Networks (CNN), for grasping random objects.

## EXTRA-CURRICULAR ACTIVITIES

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- **Internal Vice President, Outstanding Teens Association (Hong Kong)**

*Oct 2020 - now*

- Contacting and promoting events to OTA members
- Handling Financial management
- Coordinating internal administration and organizing external voluntary services (e.g., University Simulations in 2021 (<https://skmdonaldshek.wixsite.com/hkotausims2021>) and 2022 (<https://skmdonaldshek.wixsite.com/hkotausims2022>))

- **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

- **Vice President (Executive), Outstanding Teens Association (Hong Kong)**

*Aug 2018 - Sep 2020*

- Led the team of the Academic and Development Committee to plan and organize a Peer to Peer Programme (P2P X STEM) for all students in primary schools and secondary schools in Hong Kong
- Contacting with other student leaders and teachers to promote P2P X STEM
- Sharing personal experience on STEM (robotics) in P2P X STEM

- **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

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**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