Chan Cheuk Ka (陳綽家)

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🌐 https://cck.wtf

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EDUCATION

2021 Sep - 2025 Jul
Bachelor's Degree (HK) - Biomedical Engineering
The Chinese University of Hong Kong (CUHK)
★★ First Class Honour (cGPA: 3.579/4.0)

- Dean's list, Faculty of Engineering (2021–2022 & 2022–2023)
- Outstanding Achievement Award Scholarship, BME (2021–2022)
- *Specialisation Stream: Molecular, Cell, and Tissue Engineering*

2024 Jan - 2024 Jun
Academic Exchange (UK) - Affiliate: Biochemical Engineering
University College London (UCL)
★★ Average: 74.3% (A)

- Inorganic Chemistry for Engineers – (*Quantum orbitals*)
- Biochemistry and Molecular Biology – (*Genetic engineering*)
- Biochemical Engineering Processing and Design – (*Fluid dynamics*)

PROJECTS

2023 Feb - 2024 Oct
Antibiotic Resistance Gene Detection Research Project 🇹🇸 🖐 🄲🅂🅂 🖇 🔥
International Genetically Engineered Machine (iGEM) Competition 2024
– CUHK team: ResiSense
★★ *Gold Medal & Nominated for Best Education Award* among 400+ teams in Paris

Team wiki website: https://resisense.github.io
- Designed a point-of-care kit to detect antibiotic resistance genes in bacteria (superbugs) using RCA and G-quadruplex
- Engineered & measured DNA
- Cultured & transformed bacteria
- Built a web framework & team website to introduce our project
- Directed, wrote, acted in, edited, & animated promotional & presentation videos
- Interviewed & consulted various experts to gather insights
- Presented at a symposium

2024 Sep - 2025 Apr
Stem Cell Chondrogenesis Engineering Project
Biomedical Engineering Final Year Project
- Cultured stem cells (MSCs) into cartilage tissue under hypoxia & normoxia

2023 Sep - 2023 Dec
Quadriplegic Computer Input System Course Project 🄶 🔵
Medical Instrumentation Design Course
- Designed & built a computer input system for quadriplegic patients using gyroscope mounted on a pair of goggles
- Averaged 13 words per minute, ranked 1st in class

2023 Sep - 2023 Dec
Brain-Computer Interface Course Project 🔺
Neuroengineering Course
- Wrote a machine learning algorithm to interpret user intent by analysing ECG signals with only 4 probes
- Averaged 40% accuracy given 4 bins, ranked 2nd in class

2023 Sep - 2023 Dec
Pneumonia Diagnosis AI & Health Tracking AI Course Project 🐍
Big Data in Healthcare Course
- Trained an AI neural network to classify pneumonia types from lung x-rays with 95% accuracy
- Trained a multi-class AI model to classify health risks from health tracker data with 99% accuracy

2024 Sep - 2024 Dec
Thyroid Disease Diagnosis AI Course Project 🐍
Data Analytics for Personalised Genomics and Precision Medicine Course
- Trained a multi-class AI classifier to diagnose thyroid disease from blood tests with 97% accuracy

STEM TEACHING EXPERIENCES

Please feel free to view my teaching materials here: https://cck.wtf/portfolio/stem

Year	Event	My Role	Size
2025 - Present	**Freelance – STEM classes teaching** *Multiple companies × Primary & Secondary schools*	• Teaching STEM classes as a freelancer	
2025	**AI racing workshop** *AI Summer Camp – CUHK × ITSC*	• <u>Wrote a neural network AI racing app</u> (https://cck.wtf/racing-ai) • Created teaching materials	*40 participants*
2025	**Catapult workshop** *InnoCarnival – CUHK × HKSTP*	• Created teaching materials • Mentored tutors	*400+ participants* *50+ sessions*
2025	**Hydraulic crane workshop** *InnoCarnival – CUHK × HKFYG*	• Created teaching materials	*30+ participants* *2 classes*
2025	**DIY vacuum cleaner workshop** *HK SciFest – CUHK × HK Science Museum*	• <u>Designed the DIY STEM kit</u> • Created teaching materials • Built <u>physical theory demonstrations</u>	*100+ participants* *4 classes*
2025	**Micro:bit hovercraft workshop** *STEM tutor programme – CUHK × Primary schools*	• Mentored secondary student tutors	*50+ students* *4 classes*
2023 - 2025	**VEX IQ robotic tournament** *HK Tech Challenge Game – CUHK × Asian Robotic League*	• Acted as **panel judge** & **referee**	
2023 - 2025	**VEX IQ robotic workshop** *CUHK × MakerSpark*	• STEM experience classes (in–school) • Competition preparation classes	*25+ classes*
2023	**VEX IQ robotic football game** *InnoCarnival – CUHK × HKSTP*	• <u>Designed & built</u> a robot football game	

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

2022 Feb - 2023 Jan

Biomedical Engineering Society, CUHK

Secretary & Chung Chi College Representative

- Managed all internal documents of the society
- Handled all external communications
- Organised numerous academic–focused & student-focused events
- Designed **~50% of society materials**, including souvenirs, social media promotion posts, and business cards
- **Hosted** freshmen orientation day and camp, & acted as group "parent"

AWARDS

2023 - 2024	**International Genetically Engineered Machine (iGEM) Competition** *(Gold Medal)* Hosted by the *iGEM Foundation*	
2021 - 2022 & 2022 - 2023	**Dean's List Certificate** Awarded by *CUHK: Faculty of Engineering (CUHK FoE)*	
2021 - 2022	**Biomedical Engineering Outstanding Achievement Award & Scholarship** Awarded by *CUHK: Department of Biomedical Engineering (CUHK BME)*	
2024 - 2025	**Swire Group Staff Hong Kong Scholarship** Hosted by *John Swire & Sons (H.K.) Limited*	
2019 - 2020	**Hong Kong Biology Literacy Award** *(Merit)* Hosted by the *Hong Kong Association for Science and Mathematics Education*	
2019	**International Biology Olympiad (IBO) - Hong Kong Contest** *(Bronze Award)* Hosted by the *International Biology Olympiad e.V. (IBO)*	
2019	**Computer App Programming Competition** *(Bronze Prize)* Hosted by the *Hong Kong Polytechnic University (PolyU)*	