

# Herman Mak

British and Hong Kong dual citizen

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## EDUCATION

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### MSc Advanced Aeronautical Engineering

Oct 2020 – Sep 2021

*Imperial College London*

*London, UK*

- On course for Distinction
- Took modules on aerodynamics (including turbulence, flow control, aeroservoelasticity, compressible flows, and CFD), structural dynamics, control theory, AI, spaceflight mechanics, aircraft design, and airworthiness, as well as a broad range of other topics related to aeronautical engineering

### BA&Sc How do fluids affect vehicles?

Sep 2016 – May 2020

*Quest University Canada*

*Squamish, BC, Canada*

- GPA of 3.76/4.00; President's List: Spring 2018, Fall 2018, Spring 2019
- Awarded the Quest University Canada Scholarship
- Designed a self-directed curriculum focused on the above Question, taking courses primarily in mathematics and physics that are uniquely conducted with round-table discussions, emphasising creative problem solving, and interdisciplinary, inquiry-based small-group learning
- Courses are conducted in successive 3.5 week blocks allowing for multiple time constrained, independent/group research projects per course that can involve opportunities to conduct fieldwork such as the physics momentum model project mentioned below

### IB & Ontario Secondary School Diploma

Aug 2005 – Jun 2016

*Canadian International School of Hong Kong*

*Hong Kong*

- Maple Leaf Award; Ontario Scholar
- Awarded the Manulife-Canadian International School of Hong Kong Scholarship

## PROJECTS

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### Imperial Formula Racing - Aerodynamics | *Star-CCM+*, *SolidWorks*

Oct 2020 – present

- Working with a small team to design the shape of the nose-cone and body-panels for the 2021 Imperial Formula Racing student car
- Delegating work amongst ourselves to meet the quick turnaround time for conceptual design
- Quickly gained an understanding of Star-CCM+ to analyse the flow field around the car

### Bachelor's Final Year Project | *MATLAB*, *PIVLab*, *SolidWorks*

Oct 2019 – May 2020

- Designed and conducted experimental fluid dynamics research on aerofoils at the University of Southampton's low speed water flume as a visiting research student under the guidance of Dr Christina Vanderwel by auditing courses and teaching myself all the above-mentioned software.
- Developed laboratory skills such as data collection skills and manufacturing skills from working with multiple departments to select the optimal materials/process to build aerofoil models
- Wrote a research report titled "An Analysis of Symmetric and Cambered Aerofoils in Low Reynolds Number Flow Using Particle Image Velocimetry (PIV)" ([report link](#))
- Delivered a recorded presentation regarding the project to an audience entirely unfamiliar with the subject ([video link](#))

### Physics Momentum Model | *Python*

Jan 2018 – Feb 2018

- Self taught Python to iteratively improve numerical physics models based on data collected on a phone in multiple increasingly complex real-world situations throughout my undergraduate Physics 1 class
- Only student at Quest University to have found a solution to accurately model the physics from data collected in a rotating reference frame by pulling from knowledge garnered from other courses and applying in-situ/retroactive noise and error correction

## WORK EXPERIENCE (PART-TIME & TEMPORARY JOBS)

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### Peer Tutor

*Quest University Canada*

Aug 2018 – Mar 2020

*Squamish, BC, Canada*

- Tutored peers in course-specific and drop-in sessions on rhetorical and quantitative reasoning skills, in addition to students struggling in mandatory quantitative reasoning/mathematics diagnostics
- Proposed, created, and ran academic workshops on technical skills such as Excel and LaTeX
- Improved upon and digitised the collection of student evaluations, reviewed collected evaluations, and performed marketing duties in small teams
- Spearheaded internationalisation efforts of peer tutors at the university

### Education Technology Intern

*Independent Schools Foundation Academy*

Jun 2018 – Aug 2018

*Hong Kong*

- Managed the school's online learning platform during an unexpected staff vacancy
- Put the team weeks ahead of schedule by taking the initiative to learn HTML, JavaScript, and MySQL for front- and back-end access to quickly perform user requests, and automate a yearly process
- Created graphics and how-to guides in Mandarin and English for teachers on technology usage

### Special Events Crew

*Quest University Canada*

Sep 2016 – May 2018

*Squamish, BC, Canada*

- Led teams of volunteers, worked independently, or worked with a small team to set up staging and AV equipment for events
- Aided in event organisation, and performed customer service duties

### Day Camp Counsellor & Photographer

*Treasure House, Noah's Ark*

Jul 2017 – Aug 2017

*Hong Kong*

- Mentored children through educational activities, and streamlined the photo selection/editing process

## COMMUNITY SERVICE

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### English Language Teaching Assistant

*Immigrant Services Society of BC*

Nov 2018 – Mar 2020

*Squamish, BC, Canada*

- Taught English to newly incoming immigrants and refugees, fostering relationships in the local immigrant community, cultivating effective communication skills in limiting circumstances

### Mentor/Big Brother

*Big Brothers Big Sisters of Canada*

Jan 2018 - Apr 2019

*Squamish, BC, Canada*

- Built up confidence in high school students through social interaction and mentoring in maths and sciences, solidifying my ability to create an effective, enjoyable learning environment

### Latin Ballroom Dance Teaching Assistant

*Kennes Yiu Dance Studio*

Aug 2014 - Jun 2016

*Hong Kong*

- Taught under-privileged children Latin ballroom dances

## RELEVANT SKILLS

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- Proficient in MATLAB, Python, and LaTeX
- Experienced in Star-CCM+, Fusion 360, SolidWorks, Adobe Creative Suite, and machine learning (Keras and Tensorflow)
- Novice in Git, R, C++, Fortran, HTML, JavaScript, and MySQL
- Ability to write and speak in English, Cantonese, and Mandarin

## EXTRACURRICULAR ACTIVITIES

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- MSc course representative
- Member of the aerodynamics team for Imperial Formula Racing
- Led the Quest University Social Dance Club, and taught dancing
- Peer reviewed for Quest University's academic journal - Momenta