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EDUCATION

The Hong Kong Polytechnic University

B.Eng. (Hons) in Product Engineering with a Second Major IE

B.Eng. (Hons) Scheme in Product and Industrial Engineering

Hong Hum, Kowloon, Hong Kong SAR

September 2025 - May 2028 (Expected)

September 2024 - August 2025

Tsinghua University (Exchange)

B.Eng. in Creative Design and Intelligent Engineering

Beijing, China

September 2025 - January 2026 (Scheduled)

Tsinghua TEEP & X-Institute

Jointed Training Research Scholar (Track of Social Innovation)

Supervisor: Prof. Ming Tang

Beijing, China

September 2024 - May 2028 (Expected)

Shenzhen Medical Academy of Research and Translation

Visiting Research Student - Mingxu Hu's Lab

Supervisor: Dr. Mingxu Hu (PI), Dr. Qi Zhang

Shenzhen, Guangdong, China

June 2025 - July 2025

Exchange

1) Semester Exchange (2025/2026 Semester 1), Tsinghua University

September 2025 - January 2026

2) Social Innovation Training, Shenzhen X-Institute & ByteDance Ltd. & Accenture Co. Ltd.

January 2025

3) AI Winter School 2025, Center for the Fundamental Physics of the Universe & Brown University

January 2025

4) 2024 Ministry of Education of PPC Teacher and Student Exchange Plan - Human-machine Shared Control Intelligent Car Project, Northeastern University & The Hong Kong Polytechnic University

December 2024

RESEARCH PUBLICATIONS

Wang, X.^{*}, **Huang, T. Y.**, Jiang, Z., Wang, Y. "Bio-Cryptography: Dual Deep Learning Framework for Protein Watermarking via Geometric-Chemical Fingerprinting" ICML 2025 Workshop on NewML [CORE A*, CCF-A] 2025

Wang, Y.^{*}, Wang, J., **Huang, T. Y.**, Yang, J., Xu, Z. "STGCN-LSTM for Olympic Medal Prediction: Dynamic Power Modeling and Causal Policy Optimization" ICML 2025 Workshop on NewML [CORE A*, CCF-A] 2025

Wang, Y.^{*}, Cai, M., **Huang, T. Y.** "AI for Disease Prediction: Performance Insights and Key Limitations" *Journal of Clinical Neuroscience* 138, 111360 [IF 1.8; CS 3.9 (Med-Surg Q1)]

<https://doi.org/10.1016/j.jocn.2025.111360>

2025

Wang, X.^{*}, Wang, Y.⁺, **Huang, T. Y.**⁺ "Crypto-ncRNA: Encryption Algorithm Based on Non-Coding RNA (ncRNA)" ICLR 2025 Workshop on AI for Nucleic Acids [CORE A*, CCF-A]

<https://openreview.net/forum?id=j60DUDw4vN>

2025

^{*} First Author ⁺ Co-First Author

ACADEMIC PARTICIPATION

Reviewer

ICML 2025 Workshop · 2nd AI for MATH

2025

F1000 Research

2025

PROJECTS

Design Optimization of Hydraulic Press Plate using Finite Element

Analysis

January 2016 - April 2016

Major Project as a part of curriculum

· An Industrial Defined Project in collaboration with Incredible Machines, Rajkot

- Designed and performed an FEA analysis of the plates of Hydraulic machine with the capacity of 250-ton
- Optimization in terms of design and material reduction, leading to cost effectiveness, considering minimum deformation of plates during operation

Mathematical Modeling and Analysis of a Hydro-pneumatic Suspension Column of a Car

July 2015 - October 2015

Minor Project as a part of curriculum

- Modeled a 2-DOF system considering sprung and unsprung mass of the vehicle
- Performed sensitivity analysis to minimize the displacement of sprung and unsprung mass caused by vehicle hitting a bump using Transfer Function approach
- The settling time and displacement of the system were decreased using Hydro-pneumatic suspension system

Design and Thermal analysis of Disk Brake Rotor using ANSYS

March 2016

GT Motorsports, a Formula Student Team of GTU

- Applied Energy Equation to calculate theoretical data for the input of simulation
- Devised boundary conditions for modeling the system by calculating including Heat power and Heat flux
- A Static thermal analysis in ANSYS Workbench using real time boundary conditions to obtain temperature distribution of Brake Rotor

Design, Development and Analysis of Exhaust System and Muffler assembly

Sept 2015 - Jan 2016

GT Motorsports, a Formula Student Team of GTU

- Design and Development of complete muffler assembly for the reduction of noise under 110 dBC as per the rulebook
- Modeling and Acoustics analysis of muffler assembly in ANSYS to determine the Transmission Loss
- A CFD analysis of Exhaust Manifold using ANSYS Fluent to optimize the exhaust gas flow

INTERNSHIPS / TRAININGS

Student Research Intern , RC-DSAI, The Hong Kong Polytechnic University	Oct 2024 – Present
Student Assistant , Division of Science, Engineering & Health Studies, CPCE · PolyU	Mar 2024 – Apr 2025
AI & Data Trainee , Royal Plaza Hotel (Accounting & IT Dept.)	Dec 2023 – Apr 2024
Visiting Student – Cryo-EM Research , SMART & Shenzhen Bay Laboratory	Jun 2025 – Jul 2025
AI Winter School 2025 , Brown University	Jan 2025

POSITION OF RESPONSIBILITY

CAE and Powertrain Lead, Formula SAE

August 2015 - Present

GT Motorsports, a Formula Student Team of GTU

- Devised the design objectives and validation of designs through simulations and testings
- Concentrated on real time simulation of Exhaust System and the noise reduction of Exhaust system
- Part of core Design group in the team helping with various design decisions
- Performed numerous simulations of various components of the car in the area of FEA and CFD segments with documentations

Head coordinator of Mechanical section at Robotics club

July 2015 - May 2016

Sanjaybhai Rajguru College of Engineering

- A college level Robotics club established by students with the aim of learning and professional skill development among students and peers
- Lead in Mechanical work of Robotics club, working mostly with CAD and Hardware systems
- Team leader and active member working to develop various robots of different concepts and configurations

EXTRA-CURRICULAR

- Master of Ceremonies – 75th PRC National Day Luncheon (HKFTU) Oct 2024
- 9-day Cycling Tour round Taiwan (1 120 km) Aug 2023

ACHIEVEMENTS

HKSAR Government Scholarship Fund – Reaching Out Award (ROA)	2025
PolyU Entry Scholarship (The Hong Kong Polytechnic University)	2024

SKILLS AND INTERESTS

Computer-based	Python(Pandas, PyTorch, TensorFlow, ...), C++, SQL, SAS, R, CAD&CAE (SolidWorks) Adobe(Photoshop, Illustrator, InDesign), IMOD, PyMol, ChimeraX, LaTeX, MS Office
Manufacturing	Additive Manufacturing(FDM, SLA, SLS, ...), Reverse Engineering, Quality Engineering, Robotics (Arduino/Raspberry Pi), Benchwork, Engineering Drawing
Soft skills	Product & Industrial Design/Development, Design Thinking, Design for Many(Optimizing, Manufacturing, Sustainability, ...), Project Management, Human-centered Design
Languages	Cantonese/Mandarin (Native), English (Fluent)

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.