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Education

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

Sep. 2024 – Aug. 2028

Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University

⇒ Major Course: Product Engineering and Design · Programming for Scientist and Engineer · Engineering Economics · Engineering Management · University Physics · Advanced Mathematics · Materials Science and Engineering · Engineering Drawing · Computer-Aided Design and Engineering · Engineering Laws and Ethics

⇒ Position: Student Research Intern, RC-DSAI (Oct. 2024 – Now) · Student Representative (2024/2025 Sem 1 & 2)

Jointed Training: Social Innovation

Sep. 2024 – Aug. 2028

X-Institute · Tsinghua SIGS & TEEP, Shenzhen, China

⇒ Supervisor: Dr. Tang Ming (Former Counselor of the State Council, China)

⇒ Collaborate: ByteDance Ltd. · Accenture Co. Ltd.

Associate in Statistics and Data Science

Sep. 2023 – Aug. 2024

Hong Kong Community College, The Hong Kong Polytechnic University

⇒ Position: Student Ambassador (Oct. 2023 – Oct. 2024) · Student Representative (2023/2024 Sem 1 & 2)

Hong Kong Diploma of Secondary Education Examination (HKDSE)

Sep. 2018 – Aug. 2023

Pui Kiu College, Hong Kong SAR, China

Exchange Study Experience:

- 1) Semester Exchange (2025/2026 Semester 1), Tsinghua University *Sep. 2025 – Jan. 2026*
- 2) Social Innovation Training, Shenzhen X-Institute · ByteDance Ltd. · Accenture Co. Ltd. *Jan. 2025*
- 3) AI Winter School 2025, Center for the Fundamental Physics of the Universe · Department of Physics, Brown University *Jan. 2025*
- 4) Intelligent Car Human-machine Shared Control Exchange Project, Northeastern University · The Hong Kong Polytechnic University, 2024 Teacher and Student Exchange Plan between Mainland Universities and Universities in Hong Kong and Macao *Dec. 2024*

Position

- 1) **Membership of District Youth Development and Civic Education Committee, HAD, HKSAR Government** *Apr. 2025 – Now*
Member
- 2) **Apricot AI Ltd., HKSAR** *Mar. 2025 – Now*
AI Agent R&D Parttime
- 3) **Hong Kong MBA Institute, HKSAR, China** *Feb. 2025 – Now*
Assistant to the President (Management and Technical Director)
- 4) **Qingbei Intelligent Technology Co., Ltd., China** *Feb. 2025 – Now*
Online AI Product & Algorithm R&D Intern
- 5) **Ongoing Start-up Enterprise Projects (AI4Goods), China (Confidentiality)** *Jan. 2025 – Now*
Shareholder and AI Algorithm Engineer and Greater Bay Area Strategy Consultant
- 6) **PolySmart, Research Centre – Data Science & AI, PolyU, HKSAR, China** *Oct. 2024 – Now*
Student Research Intern
- 7) **Knowledge Transfer and Entrepreneurship Office, PolyU, HKSAR** *Oct. 2024 – Now*
PolyVentures Student Assistants

Research Interest

- | | | |
|----------------------------|--------------------------------|-------------------------------------|
| ⇒ Cognitive Emergence | ⇒ Life Emergence | ⇒ Computational World |
| ⇒ Neural Network | ⇒ Collective Intelligence (CI) | ⇒ Social Network Analysis (SNA) |
| ⇒ Machine & Deep Learning | ⇒ Multi-Agent Systems (MAS) | ⇒ Spatial & Ecological Data Science |
| ⇒ Bio-heuristic Algorithms | ⇒ Agent-Based Modelling (ABM) | ⇒ Operations Research |

Publication

- 1) Wang, X.* , Wang, Y.⁺ , **Huang, T. Y.**⁺ (2025). Crypto-ncRNA: Encryption Algorithm Based on Non-Coding RNA (ncRNA). *ICLR 2025 Workshop on AI for Nucleic Acids*. <https://openreview.net/forum?id=j6ODUDw4vN>
- 2) Wang, Y.* , Wang, J., **Huang, T. Y.**, Yang, J., Yang, G., Xu, Z. (2025). STGCN-LSTM for Olympic Medal Prediction: Dynamic Power Modelling and Causal Policy Optimization. *arXiv preprint arXiv:2501.17711*.

* refers to First Author; + refers to Co-First Author

Project

- 1) **Huang, T. Y.*** Emergent Intelligent Hardware Systems Based on Coupled Synaptic Devices *(Sep. 2025 – Sep. 2026)*
PolyU URIS (Undergraduate Research and Innovation Scheme) Project; Supervisor: Prof. Han Suting (ABCT)
- 2) Wang, X.* , Jiang, Z., Wang, Y., **Huang, T. Y.** Biological digital watermarking: extracting protein skeleton-based on Matif algorithm *Apr. 2025 – Now*

- 3) **Huang, T. Y.*** SMA-ToT: Multi-Path Reasoning Optimization Method Based on Bio-heuristic Algorithms *Mar. 2025 – Now*
 - 4) **Huang, T. Y.*** Multi-Modal BERT for Health Crisis Early Warning with Population Analysis *Feb. 2025 – Now*
 - 5) **Huang, T. Y.*** "One Young Supporting One Elderly": Leveraging AI Digital Twin Technology to Alleviate Emotional Companionship Challenges for the Elderly *Dec. 2024 – Now*
X-Institute Enhanced Student Research Training (ESRT) Project; Supervisor: Dr. Tang Ming; collaborating with: ByteDance Ltd. & Accenture Co. Ltd.
 - 6) Wang, Y.*, **Huang, T. Y.+** The Application of Multi-modal BERT Model in Extraction and Analysis of Global Heat Wave Disaster Adaptability Factors *Oct. 2024 – Now*
Project of Innovative Practice Training Program for College Students, Chinese Academic of Sciences; Supervisor: Prof. Yong Ge
 - 7) Wang, Y.*, **Huang, T. Y.+** Machine Learning with Multi-stage Production Process Decision-making and Cost Optimization Based on Sampling Inspection *Oct. 2024 – Now*
- * refers to First Author; + refers to Co-First Author*

Research Study

- 1) X-Challenge 2024: Interdisciplinary Cutting-edge Disruptive Innovation Challenge, Tsinghua TEEP & X-Institute *Jul. 2024 – Aug. 2024*
Track 9 – How to cultivate innovative talents and promote social equity on a large scale in the era of artificial intelligence?
Supervisor: Dr. Tang Ming (Former Counselor of the State Council, China) · Dr. Zuo Xiaolei (Chief Economist with China Galaxy Securities) · Dr. Huang Licheng (Director of Marketing Department (Carrier Business Group), Huawei Technologies Latin America Region) · Mr. Wang Mingsheng (Researcher, X-Institute)
 ⇒ Developed the plan of addressing resource misalignment by integrating AI model and data analysis method
 ⇒ Represented the research group of Track 9 at X-Fusion Global Innovators Summit 2024
Keys: *Social Innovation; Project-based Learning; Large Language Model; Personalized recommendation*
- 2) X-Idea 2023: X-Institute International Summer School, Tsinghua TEEP & X-Institute *Jul. 2023 – Aug. 2023*
Track 6 – Building Extraterrestrial Ecosystems: From Microbes to Human (The Most Challenging Award)
Supervisor: Prof. Jeff Gore (Professor, Department of Physics, Massachusetts Institute of Technology) · Prof. Juan Keymer (Associated Faculty, Department of Natural Sciences and Technology, University of Aysén · Assistant Professor, Institute for Advanced Studies, X-Institute) · Dr. Janneke Noorlag (Researcher & Lab Manager, Department of Natural Sciences and Technology, University of Aysén · Supporter, Institute for Advanced Studies, X-Institute) · Prof. Jiliang Hu (Assistant Professor, Tsinghua university) · Dr. Mo Han (BGI Genomics Researcher)
 ⇒ Modelled ecological interactions using the Lotka-Volterra Model for simulations the chaos and fractals
 ⇒ Designed a portable and machine-learning based microbial rapid substance measured system
 ⇒ Designed a microbial neural network by exploring the potential with island biogeography and controllable microbial neurons
Keys: *Microbiology; Population Dynamic; Ecology; Machine Learning*

Working/Internship Experience

- Student Assistant** *Mar. 2024 – Apr. 2025*
 Division of Science, Engineering and Health Studies, CPCE, PolyU, HKSAR, China
- Trainee** (Department of Accounting & Information Technology) *Dec. 2023 – Apr. 2024*
 Royal Plaza Hotel, HKSAR, China

Other Experience

- Master of Ceremonies** *Oct. 2024*
 Luncheon celebrating the 75th National Day of the People's Republic of China and the 27th anniversary of Hong Kong reunification, HKFTU
- Student Representative of B.Eng. (Hons) Product and Industrial Engineering** *Feb. 2025 – Now*
 Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University
- Student Representative of Associate in Statistics and Data Science** *Oct. 2024*
 Division of Science, Engineering, and Health Studies (SEHS), College of Professional and Continuing Education, The Hong Kong Polytechnic University

Achievement

- ⇒ **Scholarship** · PolyU ISE Entry Scholarship for Non-JUPAS Admissions *Oct. 2024*
- ⇒ **Scholarship** · PolyU CPCE Study Visit Programme Scholarship *Jun. 2024*
- ⇒ **Award** · The Most Academic Award, Research Award, X-Institute *Jul. 2023*
- ⇒ **Certification** · Microsoft Certification: Azure AI Fundamentals *Dec. 2021*
- ⇒ **Certification** · The Hong Kong Polytechnic University Mathematics Gifted Programme, Advanced Level *Dec. 2021*

Skills & Interest

Language Skills: Cantonese (Native), Mandarin (Native), English (Proficient)
 Technical Skills: Proficient in Python, C/C++, MATLAB, MySQL, CAD (SolidWorks), SAS, R, MS Office, Colab, etc...
 Interest: Arts, Design, Music, Cycling, Social Science, Philosophy, Humanities, Chinese Literature