

# Tin-Yeh HUANG (Heaven)

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## Education

**B.Eng. Creative Design and Intelligent Engineering (CDIE)** *Sep. 2025 – Jan. 2026*  
Xinya College, Tsinghua University, Beijing, China

**Visiting Student – Xuming Hu's Research Group** *Jun. 2025 – Jul. 2025*  
Shenzhen Medical Academy of Research and Translation (SMART) & Shenzhen Bay Laboratory (SZBL), Shenzhen, China

**B.Eng. (Hons) Product Engineering with a second major in IE (Innovation and Entrepreneurship)** *Sep. 2025 – Aug. 2028*  
**B.Eng. (Hons) Scheme in Product and Industrial Engineering** *Sep. 2024 – Aug. 2028*

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

⇒ Major Course: Product Engineering and Design · 3D Scanning and Modeling · Reverse Engineering · Additive Manufacturing · 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, HKSAR

⇒ 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.<sup>+</sup>, **Huang, T. Y.<sup>+</sup>** (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*.

## 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 plain 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, Misics, Cycling, Social Science, Philosophy, Humanities, Chinese Literature