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## 教育背景

香港中文大学 (CUHK)

2023 年 8 月 – 至今

机械与自动化工程学系博士研究生; 导师: Ben M. Chen

北京航空航天大学

2019 年 9 月 – 2023 年 6 月

软件工程学士

北京航空航天大学

2020 年 9 月 – 2023 年 6 月

英语双学位学士 (IELTS 8.0)

## 获奖与荣誉

最佳海报演讲奖 (Best Poster Presentation)

2026 年 7 月

Nexus Forum 2026

英国牛津

- 获奖工作: “HEAT-DT: Embodied UAV Agents and LLM-Empowered Digital Twins for Smart Heat Risk Management” (Y. Li, **Y. Huang**, X. Chen, B.M. Chen)。

室内与室外赛冠军, Team CWT United

2025 – 2026

第 16 届国际微型飞行器竞赛 (IMAV)

墨西哥普埃布拉

- 获奖工作: “CU-Fundamental: A Comprehensive Simulation Framework for Autonomous MAV” (J. Wang, **Y. Huang**, Y. Chen, Z. Wu, et al.)。

最佳学生论文奖 (Best Student Paper Award)

2025

第 19 届 IEEE 国际控制与自动化会议 (ICCA)

爱沙尼亚塔林

- 获奖论文: “DefectGPT: An Automatic Retrieval-Augmented Framework for Digital Twin-Based Defect Information Management and Analytics” (**Y. Huang**, J. Zhang, X. Chen, A. Lam, B.M. Chen)。

## 发表论文

- Y. Huang**, Y. Li, J. Zhang, X. Chen, A. Lam, M.J. Skibniewski, B.M. Chen. “Asset-Centric and Propagation-Aware Retrieval-Augmented Generation for Building Defect Diagnosis and Asset Maintenance Decision Support,” *Automation in Construction*, under review, 2026.
- Y. Huang**, Y. Li, X. Chen, B.M. Chen. “Harnessing LLM-based multi-agent framework for scenario-aware building energy and environmental modelling,” *Engineering Applications of Artificial Intelligence*, under review, 2026.
- Y. Huang**, J. Zhang, X. Chen, A. Lam, B.M. Chen. “DefectGPT: An Automatic Retrieval-Augmented Framework for Digital Twin-Based Defect Information Management and Analytics,” *2025 IEEE 19th International Conference on Control & Automation (ICCA)*, pp. 156–161, 2025. [**Best Student Paper Award**]
- Y. Huang**, J. Zhang, X. Chen, A.H.F. Lam, B.M. Chen. “From Simulation to Prediction: Enhancing Digital Twins with Advanced Generative AI Technologies,” *2024 IEEE 18th International Conference on Control & Automation (ICCA)*, pp. 490–495, 2024.
- B. Zhao, J. Zhang, **Y. Huang**, X. Chen, B.M. Chen. “From instance segmentation to physical quantification: High-resolution UAV-based dataset for façade defect assessment,” *Automation in Construction*, vol. 188, 106980, 2026.
- Q.G. Duan, B. Zhao, M. Han, **Y. Huang**, B.M. Chen. “FHGS: Feature-Homogenized Gaussian Splatting,” *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.
- J. Wang, **Y. Huang**, Y. Chen, Z. Wu, et al. “CU-Fundamental: A Comprehensive Simulation Framework for Autonomous MAV,” *16th International Micro Air Vehicle Conference and Competition (IMAV)*, pp. 90–97, 2025.
- J. Zhang, B. Zhao, G. Yang, X. Zhou, **Y. Huang**, C. Gao, X. Chen, B.M. Chen. “AI-empowered digital twin modeling for high-precision building defect management integrating UAV and GeoBIM,” *Building Simulation*, vol. 18, no. 10, pp. 2531–2558, 2025.

9. M. Han, J. Zhang, **Y. Huang**, J. Xu, X. Chen, B.M. Chen. “Enhancing worker monitoring and management on large-scale construction sites with UAVs and digital twin modeling,” *Automation in Construction*, vol. 174, 106108, 2025.

10. G. Yang, J. Wen, B. Zhao, Q. Li, **Y. Huang**, L. Lei, X. Chen, A. Lam, B.M. Chen. “End-to-end underwater multi-view stereo for dense scene reconstruction,” *2025 IEEE International Conference on Robotics and Automation (ICRA)*, pp. 7616–7623, 2025.

11. G. Yang, R. Cao, J. Wen, B. Zhao, Q. Li, **Y. Huang**, L. Lei, X. Chen, A. Lam, et al. “Multi-View Stereo with Geometric Encoding for Dense Scene Reconstruction,” *2025 IEEE International Conference on Robotics and Automation (ICRA)*, pp. 12473–12479, 2025.

12. D. Han, **Y. Huang**, H. Huang, T. Fang. “Distributed Coordination for Multi-Vehicle Systems in the Presence of Misbehaving Vehicles,” *Advances in Transdisciplinary Engineering*, vol. 68, pp. 656–662, 2025.

13. Q. Li, G. Yang, C. Bian, L. Long, X. Wang, C. Gao, C.L. Wong, **Y. Huang**, et al. “Autonomous design framework for deploying building integrated photovoltaics,” *Applied Energy*, vol. 377, 124760, 2025.

14. G. Yang, J. Zhang, B. Zhao, C. Gao, **Y. Huang**, J. Wen, Q. Li, J. Tang, X. Chen, et al. “Det-Recon-Reg: An Intelligent Framework Towards Automated Large-Scale Infrastructure Inspection,” *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024.

15. J. Zhang, X. Zhou, **Y. Huang**, X. Chen, B.M. Chen. “UAV-Enabled Smart Coastal Environment Monitoring for Marine Litter,” *2024 IEEE 18th International Conference on Control & Automation (ICCA)*, pp. 370–375, 2024.

16. Q. Li, G. Yang, C. Gao, **Y. Huang**, et al. “Single drone-based 3D reconstruction approach to improve public engagement in conservation of heritage buildings: A case of Hakka Tulou,” *Journal of Building Engineering*, vol. 87, 108954, 2024.

研究经历

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 香港中文大学 (CUHK)                                                                                                                                                                 | 2022 年 12 月 – 2023 年 5 月 |
| 研究助理                                                                                                                                                                          | 香港                       |
| <ul style="list-style-type: none"><li>• 面向数字孪生系统开发 GIS 环境下的数据对齐与分析流水线，整合大规模感知数据以支撑下游建模与决策。</li><li>• 构建基于 ROS 的无人机 Web 平台，支撑实时巡检与具身智能工作流，为后续大语言模型驱动的数字孪生与智能体研究奠定基础。</li></ul> |                          |

教学经历

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|----------------------------------------------------|-------------------------|
| MAEG 4060 Virtual Reality Systems and Applications | 2023 – 2026             |
| 助教，香港中文大学                                          | 香港                      |
| ENGG 1910 Demystifying Artificial Intelligence     | 2023 – 2026             |
| 助教，香港中文大学                                          | 香港                      |
| MAEG 5720 Computer Vision in Practice              | 2023 年 9 月 – 2024 年 1 月 |
| 助教，香港中文大学                                          | 香港                      |