

Yijun Huang

 www.yjhuang.net |  yjhuang@link.cuhk.edu.hk |  (852)67706714

EDUCATION

The Chinese University of Hong Kong (CUHK) PhD Candidate in Mechanical and Automation Engineering (MAE); Advisor: Ben M. Chen	Aug 2023 - Present
Beihang University, Beijing Bachelor's Degree in Software Engineering	Sep 2019 - Jun 2023
Beihang University, Beijing Concurrent Bachelor's Degree in English (IELTS 8.0)	Sep 2020 - Jun 2023

AWARDS & HONORS

Best Poster Presentation Nexus Forum 2026	Jul 2026 Oxford, UK
For “HEAT-DT: Embodied UAV Agents and LLM-Empowered Digital Twins for Smart Heat Risk Management” (Y. Li, Y. Huang, X. Chen, B.M. Chen), Rhodes House, University of Oxford.	
Indoor & Outdoor Competition Champion, Team CWT United 16th International Micro Aerial Vehicle Competition (IMAV)	2025 - 2026 Puebla, Mexico
For “CU-Fundamental: A Comprehensive Simulation Framework for Autonomous MAV” (J. Wang, Y. Huang, Y. Chen, Z. Wu, et al.).	
Best Student Paper Award 19th IEEE International Conference on Control & Automation (ICCA)	2025 Tallinn, Estonia
For “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).	

PUBLICATIONS

- 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.
- 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.
- 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.

EXPERIENCE

The Chinese University of Hong Kong (CUHK)	Dec 2022 - May 2023
Research Assistant	Hong Kong
- Developed data alignment and analytics pipelines for digital twin systems in GIS environments, integrating large-scale sensing data for downstream modeling and decision support. - Built a ROS-based UAV web platform for real-time inspection and embodied AI workflows, supporting later research on LLM-enabled digital twins and agent systems.	

TEACHING

MAEG 4060 Virtual Reality Systems and Applications	2023 - 2026
Teaching Assistant, The Chinese University of Hong Kong	Hong Kong
ENGG 1910 Demystifying Artificial Intelligence	2023 - 2026
Teaching Assistant, The Chinese University of Hong Kong	Hong Kong
MAEG 5720 Computer Vision in Practice	Sep 2023 - Jan 2024
Teaching Assistant, The Chinese University of Hong Kong	Hong Kong