THE HONG KONG POLYTECHNIC UNIVERSITY
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教育经历

- 09.2020-至今, 博士，专业：智能建造，**智能建造实验室**，建筑与房地产系, **香港理工大学**, 博导：**李恒讲座教授**
- 09.2017-06. 2020, 硕士，专业：土木工程建造与管理,**国家数字建造技术创新中心**，土木与水利工程学院, **华中科技大学**，硕导：**钟波涛教授（丁烈云院士课题组）**
- 09.2012-06.2016, 学士，专业：工程管理, 管理工程系, 南京农业大学.

科研项目

- **粤港科技合作项目**,“基于计算机视觉和区块链的进度管控及智能履约关键技术研究与应用”
- **国家自然科学基金面上项目**,“基于区块链的建筑工程质量共治共创模式研究：协调机理、可信框架、挖掘方法”（71821001）
- **国家自然科学基金面上项目**,“文本与视频数据双重驱动的施工现场安全隐患智能诊控机理及其关键技术研究”（51878311）
- **中国工程院战略咨询项目**，“工程管理领域全球工程前沿研究”（**2020/2021年热点解读专家**）
- **中国工程院重大咨询项目**，“多灾环境下川藏铁路工程系统韧性研究”

研究方向：数字技术驱动下的建筑工程项目施工安全及质量监测智能化

- 基于计算机视觉及深度学习的施工现场智能安全监测
- 智能传感器赋能下的建筑工人生理疲劳及健康安全监测
- 基于区块链的建筑工程项目“关键证据信息”安全可靠存储
- 建筑机器人背景下的安全人机协作范式研究

学术成果：一作/通讯已发表论文10篇，其中9篇JCR一区。待审论文5篇，均为JCR一区。

已发表论文(第一作者/通讯作者)

1. **Wu, H**, Li, H, Chi, H., et al. (2023). Thermal Image-based Hand Signal Recognition for Worker-Robot Collaboration in the Construction Industry: A Feasible Study. ***Advanced Engineering Informatics***. (**Accepted, SCI, JCR Q1, TOP**).
2. **Wu, H**., Li, H., Fang, X., & Luo, X. (2022). A Survey on teaching workplace skills to construction robots. ***Expert Systems with Applications***, 117658. (**SCI, JCR Q1, TOP**).
3. **Wu, H**., Zhong, B., Li, H., Guo, J., & Wang, Y. (2021). On-site construction quality inspection using blockchain and smart contracts. ***Journal of Management in Engineering***, 37(6), 04021065. (**SCI, JCR Q1, TOP**).
4. Zhong, B., Guo, J., Zhang, L., **Wu, H**.*, Li, H., & Wang, Y. (2022). A blockchain-based framework for on-site construction environmental monitoring: Proof of concept. ***Building and Environment***, 217, 109064. (**SCI, JCR Q1, TOP**).
5. Zhong, B., **Wu H**.*, Ding L, Peter Love, Li H, Luo H, & Jiao L. (2019). Mapping computer vision research in construction: Developments, knowledge gaps and implications for research. ***Automation in Construction***, 107. (**SCI, JCR Q1, TOP**).

6. **Wu, H**., Zhong, B., Li, H., Chi, H. L., & Wang, Y. (2022). On-site safety inspection of tower cranes: A blockchain-enabled conceptual framework. ***Safety Science***, 153, 105815. (**SCI, JCR Q1**).
7. **Wu, H**., Zhong, B., Li, H., Love, P., Pan, X., & Zhao, N. (2021). Combining computer vision with semantic reasoning for on-site safety management in construction. ***Journal of Building Engineering***, 42, 103036. (**SCI, JCR Q1**).
8. Zhong, B., **Wu, H**.*, Xiang, R., & Guo, J. (2022). Automatic information extraction from construction quality inspection regulations: A knowledge pattern–based ontological method. ***Journal of Construction Engineering and Management***, 148(3), 04021207. (**SCI, JCR Q1**).
9. **Wu, H**., Zhang, P., Li, H., Zhong, B., Fung, I. W., & Lee, Y. Y. R. (2022). Blockchain technology in the construction industry: Current status, challenges, and future directions. ***Journal of Construction Engineering and Management***. 148(10), 03122007. (**SCI, JCR Q1**).
10. **Wu, H**., Zhong, B., Medjdoub, B., Xing, X., & Jiao, L. (2020). An ontological metro accident case retrieval using CBR and NLP. ***Applied Sciences***, 10(15), 5298. (**SCI, JCR Q2**).

◈ 待审论文(第一作者/通讯作者)

1. **Wu, H**, Li, H, Luo, X., et al. Decentralized Management of On-site Construction Activities for Smart Quality Traceability: A Blockchain-based Approach. ***IEEE Internet of Things Journal***. (**SCI, JCR Q1, TOP**).
2. **Wu, H**, Zhang, P, Li, H, et al. Blockchain impacts to construction quality management and its adoption analysis: A game theory-based method. ***Journal of Construction Engineering and Management***. (**JCR Q1**).
3. Zhang, P, **Wu, H***, Li, H, et al. Exploring the adoption of blockchain in Modular integrated Construction projects: A game theory-based analysis. ***Journal of Cleaner Production***. (**SCI, JCR Q1, TOP**).
4. **Wu, H**, Li, H, Duan, Z, et al. An Imitation Learning Framework for Teaching Workplace Skills to Construction Robots: An Example with Interior Wall Painting. ***Expert Systems with Applications***. (**SCI, JCR Q1, TOP**).
5. **Wu, H**, Li, H, Kou, W, et al. Towards Collaborative Construction Robot System for Quality Defect Inspection Using Hierarchical Federated Learning. ***Advanced Engineering Informatics***. (**SCI, JCR Q1, TOP**).

未来研究计划

◈ 重大工程项目安全管控新纪元：不安全行为的智能化监测、反馈、治理范式研究

⇒ 云-边-端三级联邦学习驱动的施工现场协作式安全巡查机器人系统

⇒ 集成区块链和虚拟现实技术的安全施工技能培训系统

⇒ 基于区块链的建筑工程项目安全共治共创模式研究

自我评价

◈ 学习永不止步，基于当前思考构建未来的主流研究方向，勇敢的、积极的向新领域迈进

◈ 研究想法要扎根工程项目实践，研究过程要符合工程项目实践，研究结果要引领工程项目实践