

白龙

个人信息

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教育经历

香港中文大学, 电子工程学系 2021.08-2025.07

- ✦ 学位 & 专业: 哲学博士, 电子工程学
- ✦ 导师: [任洪亮教授](#), 机器人感知与人工智能研究组
- ✦ 香港中文大学校长博士奖学金计划

北京理工大学, 光电学院 2017.09-2021.06

- ✦ 学位 & 专业: 学士, 光电信息科学与工程
- ✦ CGPA: 3.55/4.0
- ✦ 导师: [高昆教授](#)

实习与访问经历

英国剑桥大学, 工程系 2021.12-2021.12

- ✦ 项目: [冬季学校-用于软体机器人的智能材料](#)
- ✦ 课程: 智能(自愈、传感、驱动)材料基础、生物学和设计、驱动、传感和控制/软机器人中的人工智能

北京理工大学, 信息与电子学院 2020.08-2020.11

- ✦ 职位: 数字图像处理研究实习生
- ✦ 导师: [鲁滨峰博士](#)

美国迈阿密大学, 电气与计算机工程系 2020.06-2020.08

- ✦ 职位: 医学图像分析研究实习生
- ✦ 导师: [Mohamed Abdel-Mottaleb教授](#), Fellow of IEEE, 讲席教授

学术奖项

- | | |
|---|-----------------|
| ✦ 香港中文大学校长博士奖学金计划 | 2021.08-2025.07 |
| ✦ 最佳学生论文奖, ICBIR 2023 (主讲作者) | 2023 |
| ✦ 最佳海报奖, IEEE ICRA 2023 手术机器人研讨会 (主讲作者) | 2023 |
| ✦ IEEE ICRA 2023 RAS 旅行补助金奖 (第一作者) | 2023 |
| ✦ 优胜奖, EMedIC Global | 2021 |
| ✦ 北京理工大学学业奖学金 | 2020 |

论文发表

(† 共同第一作者, * 通讯作者。)

会议论文:

- [1] **Sample-adaptive Augmentation for Point Cloud Recognition Against Real-world Corruptions**
Jie Wang, Lihe Ding, Tingfa Xu, Shaocong Dong, Xinli Xu, [Long Bai](#), Jianan Li*
19th International Conference on Computer Vision (ICCV), 2023.
- [2] **LLCaps: Learning to Illuminate Low-Light Capsule Endoscopy with Curved Wavelet Attention and Reverse Diffusion**
[Long Bai](#)[†], Tong Chen[†], Yanan Wu, An Wang, Mobarakol Islam, Hongliang Ren*
26th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023.
(Oral, Top 3%)
- [3] **Revisiting Distillation for Continual Learning on Visual Question Localized-Answering in Robotic**

Surgery**Long Bai**[†], Mobarakol Islam[†], Hongliang Ren^{*}*26th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023.*

- [4] **Co-Attention Gated Vision-Language Embedding for Visual Question Localized-Answering in Robotic Surgery**

Long Bai[†], Mobarakol Islam[†], Hongliang Ren^{*}*26th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023.*

- [5] **Surgical-VQLA: Gated Vision-Language Embedding for Visual Question Localized-Answering in Robotic Surgery**

Long Bai[†], Mobarakol Islam[†], Lalithkumar Seenivasan, Hongliang Ren^{*}*40th IEEE International Conference on Robotics and Automation (ICRA), 2023.***(RAS Travel Grant Award)**

- [6] **Landmark Detection using Transformer Toward Robot-assisted Nasal Airway Intubation**

Tianhang Liu, Hechen Li, **Long Bai**, Yanan Wu, An Wang, Mobarakol Islam, Hongliang Ren*International Conference on Biomimetic Intelligence and Robotics & Medical Robotics Forum (ICBIR), 2023.***(Best Student Paper Award)**

- [7] **Semi-supervised Learning for Segmentation of Bleeding Regions in Video Capsule Endoscopy**

Hechen Li, Yanan Wu, **Long Bai**, An Wang, Tong Chen, Hongliang Ren*International Conference on Biomimetic Intelligence and Robotics & Medical Robotics Forum (ICBIR), 2023*

- [8] **Deep Reinforcement Learning-Based Control for Stomach Coverage Scanning of Wireless Capsule Endoscopy**

Yameng Zhang[†], **Long Bai**[†], Li Liu^{*}, Hongliang Ren^{*}, Max Q.-H. Meng*18th IEEE International Conference on Robotics and Biomimetics (ROBIO), 2022.*

- [9] **The Influence of Age and Gender Information on the Diagnosis of Diabetic Retinopathy: Based on Neural Network**

Long Bai^{†*}, Sihang Chen[†], Mingyang Gao[†], Lelia Abdelrahman, Manal Al Ghamdi, Mohamed Abdel-Mottaleb*43rd International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2021.***期刊论文:**

- [1] **Rethinking Exemplars for Continual Semantic Segmentation in Endoscopy Scenes: Entropy-based Mini-Batch Pseudo-Replay**

Guankun Wang[†], **Long Bai**[†], Yanan Wu, Tong Chen, Hongliang Ren^{*}*Computers in Biology and Medicine (CBM), 2023. (IF: 7.7)*

- [2] **Rethinking Pain Communication for Dementia: Interaction Design using E-textile**

Yanheng Li, **Long Bai**, Yaxuan Mao, Hongliang Ren, Yu Qiao, Xin Tong, Ray LC^{*}*Frontiers in Physiology, 2023. (IF: 4.0)*

- [3] **Two-stage Contextual Transformer-based Convolutional Neural Network for Airway Extraction from CT Images**

Yanan Wu, Shuiqing Zhao, Shouliang Qi^{*}, Jie Feng, Haowen Pang, Runsheng Chang, **Long Bai**, Mengqi Li, Shuyue Xia, Wei Qian, Hongliang Ren^{*}*Artificial Intelligence in Medicine, 2023. (IF: 7.5)*

- [4] **Domain Adaptive Sim-to-Real for Oropharyngeal Organs Segmentation**

Guankun Wang, Tian-Ao Ren, Jiewen Lai, **Long Bai**, Hongliang Ren^{*}*Medical & Biological Engineering & Computing (MBEC), 2023. (IF: 3.2)*

- [5] **Transformer-based 3D U-Net for Pulmonary Vessel Segmentation and Artery-vein Separation from CT Images**

Yanan Wu, Shouliang Qi^{*}, Meihuan Wang, Shuiqing Zhao, Haowen Pang, Jiaxuan Xu, **Long Bai**, Hongliang Ren^{*}*Medical & Biological Engineering & Computing (MBEC), 2023. (IF: 3.2)*

- [6] **An RNN-LSTM Enhanced Compact and Affordable Micro Force Sensing System for Interventional**

Continuum Robots with Interchangeable End-Effector InstrumentsShilong Yao[†], Ruijie Tang[†], **Long Bai**, Hong Yan, Hongliang Ren*, Li Liu**IEEE Transactions on Instrument & Measurement (T-IM)*, 2022. (IF: 5.6)**[7] Transformer-based Disease Identification for Small-scale Capsule Endoscopy Dataset****Long Bai**, Liangyu Wang, Tong Chen, Yuanhao Zhao, Hongliang Ren**Electronics*, 2022. (IF: 2.9)**研讨会及海报展示:****[1] Sim-to-Real Segmentation in Robot-assisted Transoral Tracheal Intubation**Guankun Wang, Tian-Ao Ren, Jiewen Lai, **Long Bai**, Hongliang Ren**40th IEEE International Conference on Robotics and Automation (ICRA), 2023, Workshop on New Evolutions in Surgical Robotics.***(Best Poster Award)****[2] The Exploration and Evaluation of Using Neural Style Transfer in Generating Affective 360° Panoramic VR Environments**Yanheng Li, **Long Bai**, Yaxuan Mao, Xuening Peng, Zehao Zhang, Xin Tong*, Ray LC**30th IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*, 2023, Poster.**预印本及海报展示:****[1] Surgical Tool Classification and Localization: Results and Methods from the MICCAI 2022 SurgToolLoc Challenge**Aneeq Zia, Kiran Bhattacharyya, Xi Liu, Max Berniker, Ziheng Wang, Rogerio Nespolo, ..., **Long Bai**, et al.*ArXiv Preprint ArXiv:2305.07152.***[2] Learning Monocular Depth and Ego-motion for Multimodal Wireless Capsule Endoscopy**Liangyu Wang[†], **Long Bai**[†], Shilong Yao, Yanheng Li, Sishen Yuan, Yanan Wu, Yang Zhang, Max Q.-H. Meng, Zhen Li, Hongliang Ren**Artificial Intelligence in Medicine*, 2023, Under Review.**[3] Revisiting Consistent and Contrastive Augmentations in Semi-supervised Skill Assessment in Robotic Surgery****Long Bai**[†], Qiaozhi Tan[†], Wenzhen Dong, Lalithkumar Seenivasan, Beilei Cui, An Wang, Mobarakol Islam, Hongliang Ren**International Journal for Computer Assisted Radiology and Surgery (IJCARs)*, IPCAI 2024 Special Issue, Under Review.**[4] Towards Open-Set Surgical Activity Recognition in Robot-assisted Surgery****Long Bai**[†], Guankun Wang[†], Jie Wang, Xiaoxiao Yang, Huxin Gao, Xin Liang, An Wang, Mobarakol Islam, and Hongliang Ren**40th IEEE International Conference on Robotics and Automation (ICRA)*, Under Review, 2023.**[5] Privacy-Preserving Synthetic Continual Semantic Segmentation for Robotic Surgery**Mengya Xu[†], Mobarakol Islam[†], **Long Bai**, Hongliang Ren**IEEE Transactions on Medical Imaging (T-MI)*, 2023, Under 2nd Review.**[6] Joint Sparse Representations and Coupled Dictionary Learning in Multi-Source Heterogeneous Image Pseudo-color Fusion****Long Bai**, Shilong Yao, Kun Gao*, Yanjun Huang, Ruijie Tang, Hong Yan, Max Q.-H. Meng, Hongliang Ren**IEEE Sensors Journal*, 2023, Under 3rd Review.**学术服务:****★ 期刊审稿:**

IEEE Transactions on Medical Imaging (T-MI)

IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT)

IEEE Transactions on Instrumentation and Measurement (T-IM)

Medical & Biological Engineering & Computing (MBEC)

IEEE Open Journal of Instrumentation & Measurement (OJIM)

Journal of Systems and Control Engineering (JSCE)
Journal of Medical Robotics Research (JMRR)

✦ 会议审稿:

International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)
International Conference on Information Processing in Computer-Assisted Interventions (IPCAI)
ACM CHI Conference on Human Factors in Computing Systems (CHI)
IEEE Conference on Virtual Reality and 3D User Interfaces (VR)
ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (CSCW)
ACM Symposium of Eye Tracking Research & Applications (ETRA)
ACM Conference on Intelligent User Interfaces (IUI)

✦ 特邀演讲:

2023, *Surgical Visual Question Localized-Answering*, Pre-ICRA Online
2022, *Lifelong Learning: Background, Methodology and Applications*, HKUST UG

教学经历

✦ 毕业论文指导:

2023毕业生 (与任洪亮教授):

刘天航, 香港中文大学硕士, 使用 Transformer 进行气道插管地标检测
Chung Hei Tse, 香港中文大学学士, 通过 Three.js在医学教育中应用基于Web的虚拟现实

2022毕业生 (与任洪亮教授):

王良宇, 香港中文大学硕士, 基于多模态融合的内窥镜感知算法
赵元浩, 香港中文大学硕士, 基于超声的穿刺针分割
Chi Hung Li, 香港中文大学学士, 使用虚拟现实模块开发图像引导机器人程序

✦ 助教:

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|-----------------------------------|-----------------|
| 智能可穿戴电子学 (ELEG5757), CUHK, 与任洪亮教授 | 2023.01-2023.04 |
| 机器人感知与智能 (ELEG3103), CUHK, 与任洪亮教授 | 2023.01-2023.04 |
| 工程概率论 (ENGG2760), CUHK, 与任洪亮教授 | 2022.09-2022.12 |
| 微电子器件和电路 (ELEG3201), CUHK, 与潘江鹏教授 | 2022.01-2022.04 |
| 工程概率论 (ENGG2760), CUHK, 与任洪亮教授 | 2021.09-2021.12 |

标化测试:

- ✦ 托福: 117 (阅读 30, 听力 30, 口语 27, 写作 30), 2020.09.16
✦ GRE: Verbal 168 (98%), Quantitative 170 (96%), Analytical Writing 4.0 (55%), 2020.10.11

技能:

- ✦ 精通: Python, PyTorch, MATLAB, C/C++, LaTeX, Ubuntu
✦ 擅长: Adobe Premiere, Unity3D

社会工作与荣誉:

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|---------------------|------|
| ✦ 季军, 香港科技创新界国庆杯足球赛 | 2023 |
| ✦ 殿军, 香港中文大学校友杯足球赛 | 2022 |
| ✦ 冠军, 北京理工大学超级足球联赛 | 2021 |
| ✦ 亚军, 北京房山区五人制足球赛 | 2019 |
| ✦ 北京理工大学优秀学生记者 | 2018 |