

## 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。)

## 预印本:

- [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*.

## 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\*  
*19<sup>th</sup> 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**<sup>†</sup>, Tong Chen<sup>†</sup>, Yanan Wu, An Wang, Mobarakol Islam, Hongliang Ren\**26<sup>th</sup> 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**<sup>†</sup>, Mobarakol Islam<sup>†</sup>, Hongliang Ren\**26<sup>th</sup> 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**<sup>†</sup>, Mobarakol Islam<sup>†</sup>, Hongliang Ren\**26<sup>th</sup> 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**<sup>†</sup>, Mobarakol Islam<sup>†</sup>, Lalithkumar Seenivasan, Hongliang Ren\**40<sup>th</sup> 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<sup>†</sup>, **Long Bai**<sup>†</sup>, Li Liu\*, Hongliang Ren\*, Max Q.-H. Meng*18<sup>th</sup> 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**<sup>†</sup>, Sihang Chen<sup>†</sup>, Mingyang Gao<sup>†</sup>, Lelia Abdelrahman, Manal Al Ghamdi, Mohamed Abdel-Mottaleb*43<sup>rd</sup> International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2021, (Oral).***期刊论文:**

- [1] **Privacy-Preserving Synthetic Continual Semantic Segmentation for Robotic Surgery**

Mengya Xu<sup>†</sup>, Mobarakol Islam<sup>†</sup>, **Long Bai**, Hongliang Ren\**IEEE Transactions on Medical Imaging (T-MI), 2023, Under 2<sup>nd</sup> Review. (IF: 10.6)*

- [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, Under 2<sup>nd</sup> Review, 2023. (IF: 4.0)*

- [3] **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 3<sup>rd</sup> Review. (IF: 4.3)*

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

Guankun Wang<sup>†</sup>, **Long Bai**<sup>†</sup>, Yanan Wu, Tong Chen, Hongliang Ren\**Computers in Biology and Medicine (CBM), 2023. (IF: 7.7)*

- [5] **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)

**[6] 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)

**[7] 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)

**[8] An RNN-LSTM Enhanced Compact and Affordable Micro Force Sensing System for Interventional Continuum Robots with Interchangeable End-Effector Instruments**

Shilong Yao†, Ruijie Tang†, **Long Bai**, Hong Yan, Hongliang Ren\*, Li Liu\*  
*IEEE Transactions on Instrument & Measurement (T-IM)*, 2022. (IF: 5.6)

**[9] 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\*  
*40<sup>th</sup> 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\*  
*30<sup>th</sup> IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*, 2023, Poster.

**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)

★ **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：**

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：**

★ 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