

Prof. Hongliang REN

ACADEMIC POSITION

2024 - present	Professor	Dept of Electronic Engineering	The Chinese University of Hong Kong (CUHK), Hong Kong
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ACADEMIC QUALIFICATIONS

Date	Degree	Department	University
2008	Ph.D.	Electronic Engineering	The Chinese Univ. of Hong Kong

PREVIOUS ACADEMIC POSITIONS

Date	Position	Department	University
2020-2024	Associate Professor	Electronic Engineering	The Chinese University of Hong Kong
2012-2024	Assistant & Adjunct Associate Prof.	Biomedical Engineering	National University of Singapore
2010-2012	Research Fellow	Harvard Medical School	Harvard University, USA
2008-2010	Research Fellow	Biomedical Engineering	Johns Hopkins University, USA

RESEARCH INTERESTS & PREVIOUS RELEVANT RESEARCH WORK

Surgical robotics, untethered flexible robotics and sensing, endoscopic/transorifice surgical robotics, continuum and flexible robotics, intelligent navigation, smart sensors/actuators, micro implant electronics, and more at website **labren.org**

PUBLICATION RECORDS (PREVIOUS RELEVANT RESEARCH WORK)

H-index: 71, citations: 20,100 + (Google Scholar, 2025); World's top 2% most-cited scientist

Section A - 5 REPRESENTATIVE PUBLICATIONS IN RECENT 5 YEARS (out of 40+ journal papers in the top 10 journal percentiles according to Scopus data):

- 1) Yang, Y., Shi, W., Yang, B., Xiong, T., Li, Z. A., & **Ren H.** * (2025). Regrafting submillimeter-scale ferromagnetic soft continuums. *Nature Communications*, 16(1), 7023.
- 2) Yuan S., Xu C., Cui B., Zhang T., Liang B., Yuan W. * & **Ren H.** * “Motor-free telerobotic endomicroscopy for steerable and programmable imaging in complex curved and localized areas,” *Nature Communications*, 2024, 15(1): 7680.
- 3) Zhang T., Yuan S., Xu C., Liu P., Chang C., Ng C., **Ren H.*** & Yuan W*. (2024). PneumaOCT: Pneumatic optical coherence tomography endoscopy for targeted distortion-free imaging in tortuous and narrow internal lumens. *Science Advances*, 10(35), eadp3145.
- 4) Gao H., Yang X., Xiao X., Zhu X., Zhang T., Hou C., Liu H., Meng M., Sun L., Zuo X., Li Y. & **Ren H.*** (2024). Transendoscopic flexible parallel continuum robotic mechanism for bimanual endoscopic submucosal dissection. *The International Journal of Robotics Research*, 43(3), 281-304.
- 5) Zhang L; Kumar; He; Cai; He; Gao H.; Yue.; Seet; **Ren H.*** & Ouyang J.* (2020) Fully organic compliant dry electrodes self-adhesive to skin for long-term motion-robust epidermal biopotential monitoring, *Nature Communications*, 2020, 11, 4683

Section B - 5 REPRESENTATIVE PUBLICATIONS BEYOND THE RECENT FIVE-YEAR PERIOD

- 1) Yang H.; Yeow B. S.; Li Z.; Li K.; Chang T.-H.; Jing L.; Li Y.; Ho J. S.; **Ren H.** & Chen P.-Y. (2019) Multifunctional metallic backbones for origami robotics with strain sensing and wireless communication capabilities, *Science Robotics* 4(33), eaax7020.
- 2) Li, C., Gu, X., Xiao, X., Lim, CM., & **Ren, H***. (2019). Flexible robot with variable stiffness in transoral surgery. *IEEE/ASME Transactions on Mechatronics*, 25(1), 1-10.
- 3) Li, Z.; Du, R.; Chiu, P.; Yu, H. & **Ren, H***. (2016), 'Novel Constrained Wire-driven Flexible Mechanism and Its Kinematic Analysis', *Mechanism and Machine Theory* **95**, 59--75.
- 4) Song, S.; Li, Z.; Meng, M.; Yu, H. & **Ren, H***. (2015), 'Real-Time Shape Estimation for Wire-Driven Flexible Robots with Multiple Bending Sections Based on Quadratic Bezier Curves', *IEEE Sensors Journal* **15**(11), 6326-6334.
- 5) Wang, J.; Meng, M. & **Ren, H***. (2015), 'Towards Occlusion-Free Surgical Instrument Tracking: A Modular Monocular Approach and an Agile Calibration Method', *IEEE Transactions on Automation Science & Engineering* **12**(2), 588-595.

RESEARCH SUPERVISION & SERVICES

- Supervise 30+ Ph.D. (14 graduated, 16 ongoing) and 10+ Master students
- 19+ postdoctoral and visiting fellows, and most of them are currently faculty members in China, UK, and Australia
- Served as an expert reviewer/judge for international funding agencies (60+ proposal reviews) of 10+ countries/regions (including Switzerland, Belgium, UK, Kazakhstan, Poland, Hong Kong, Macau, Chilean, China, Singapore etc.) and manuscript peer-reviews 317+ times for journals, including Science Robotics, Nature Biomedical Engineering, Nature Communications among many other top-tier journals

MAJOR AWARDS (30+)

- 2025, National Science Fund for Distinguished Young Scholars (Category A)
- 2025, MICCAI Young Scientist Award (5/3447)
- 2024, Young Researcher Award, CUHK
- 2024, Best Poster award on surgical robotics of IEEE RAS flagship ICRA 2024 Workshop on C4R in AI Era, May 2024, Yokohama Japan
- 2023, Best Paper award at the 2023 International Conference on Biomimetic Intelligence and Robotics & Medical Robotics Forum (ICBIR+MRF 2023) July
- 2023, Best Poster award at soft robotics workshop of IEEE RAS flagship ICRA 2023 Workshop on New Evolutions in Surgical Robotics, Jun 2023
- 2022, Health Longevity Catalyst Awards by NAM, National Academy of Medicine
- 2021, EMedic Global Technical Challenge Award: Magnetic Capsule
- 2020, 2nd place winner of the EMB Singapore Symposium abstract competition
- 2019, NUS Engineering Young Researcher Award
- 2018, Early Career Award from IFMBE/IAMBE (The only awardee from Asia-Pacific out of total 3 awardees internationally, Triannual Award)
- 2018, Interstellar Initiative Award, by Japan Agency for Medical R&D and New York Academy of Sciences
- 2017, EMedic Global 2017 Gold Medal: Adaptive and Compliant Transoral Robot
- 2016, Best Student Paper for IEEE RCAR2016

MAJOR PATENTS & TECHNOLOGY TRANSFER

- 40+ patents, 5 at PCT stage, 2 licensed to industry
- 1 spinoff company (RoDeep Ltd HK) entering TSSSU scheme
- 1 spinoff company (SinoRise Ltd Shenzhen) by a former PhD student