Jiewen Lai / 賴捷文

Research Assistant Professor, Department of Electronic Engineering
The Chinese University of Hong Kong

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Research Interests

Continuum Robots, Soft Robotics, Mechatronics, Medical Robots, Robot Control, Robophysics, Robot Perception, Machine Intelligence

Academic Appointment

The Chinese University of Hong Kong, Hong Kong 09/2023–Present
Research Assistant Professor, Department of Electronic Engineering
CUHK Research Committee Research Assistant Professorship Scheme

CUHK Shenzhen Research Institute, Shenzhen, China 03/2024–Present
Associate Research Fellow (courtesy)

The Chinese University of Hong Kong, Hong Kong 04/2022–06/2023
Postdoctoral Fellow, Robotics, Perception, and AI Lab
Mentor: Prof. Hongliang Ren

Education

The Hong Kong Polytechnic University (PolyU), Hong Kong 2017–2022
Ph.D. in Mechanical Engineering
M.Phil. in Mechanical Engineering (Transfer to the PhD program in 2018)
Advisors: Ir. Dr. Henry K. Chu, Prof. Li Cheng (FCAE)

The Chinese University of Hong Kong (CUHK), Hong Kong 2016–2017
M.Sc. in Mechanical & Automation Engineering
Advisors: Prof. Yun-hui Liu (FIEEE)

Wuhan University of Science and Technology, Wuhan, China 2012–2016
B.Eng. in Metallurgical Engineering, School of Materials and Metallurgy

Professional Membership

Senior Member, Chinese Mechanical Engineering Society (CMES)
Member, Chinese Association of Automation (CAA)
Member, IEEE, & IEEE Robotics and Automation Society (RAS)
Member, IEEE Robotics and Automation Technical Committee on Soft Robotics

Selected Publications

Google Scholar (Citation > 670, h-index: 12, as of May 2025)

- **J. Lai**, Y. Liu, T.-A. Ren, Y. Ma, T. Zhang, J. Y. C. Teoh, M. R. Cutkosky, and H. Ren*, "Single twistable tendon-driven continuum robots," *Science Robotics*, 2025. (Under Review).
- **J. Lai**, T.-A. Ren, P. Ye, Y. Liu, J. Sun, and H. Ren*, "Gravity-aware proactive joint-level compensation for portable soft slender robots using a single IMU and real-time simulation," *The International Journal of Robotics Research*, 2025. (Major Revision).
- Z. Min†, **J. Lai**†, and H. Ren*, "Innovating Robot-assisted Surgery through Large Vision Models," *Nature Reviews Electrical Engineering*, vol. 2, pp. 350–363, 2025. [Link] [Featured Article] [Reposted by Nature Portfolio on LinkedIn and X] (∼50 articles/year globally; first NREE paper from CUHK).
- **J. Lai**, B. Lu, and H. Ren, "Chapter 4 - kinematic concepts in minimally invasive surgical flexible robotic manipulators: State of the art," in Handbook of Robotic Surgery, Academic Press, 2025, pp. 27–41, ISBN: 978-0-443-13271-1.
- **J. Lai**, B. Lu, K. Huang, and H. K. Chu*, "Gesture-based steering framework for redundant soft robots," *IEEE/ASME Transactions on Mechatronics*, vol. 29, no. 6, pp. 4651-4663, 2024 [Link] [Demo] [Code]
- **J. Lai**†, T.-A. Ren†, W. Yue, S. Su, J. Y. K. Chan, and H. Ren*, "Sim-to-real transfer of soft robotic navigation strategies that learns from the virtual eye-in-hand vision," *IEEE Transactions on Industrial Informatics*, vol. 20, no. 2, pp. 2365–2377, 2024 [Link] [Demo] [Code]
- **J. Lai**, B. Lu, Q. Zhao, and H. K. Chu*, "Constrained motion planning of a cable-driven soft robot with compressible curvature modeling," *IEEE Robotics and Automation Letters*, vol. 7, no. 2, pp. 4813–4820, 2022 [Link] [Demo] [Code]
- **J. Lai**, K. Huang, B. Lu, Q. Zhao, and H. K. Chu*, "Verticalized-tip trajectory tracking of a 3d-printable soft continuum robot: Enabling surgical blood suction automation," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 3, pp. 1545–1556, 2021 [Link] [Demo]
- **J. Lai**, B. Lu, and H. K. Chu*, "Variable-stiffness control of a dual-segment soft robot using depth vision," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 2, pp. 1034–1045, 2021 [Link] [Demo]
- **J. Lai**, K. Huang, and H. K. Chu*, "A learning-based inverse kinematics solver for a multi-segment continuum robot in robot-independent mapping," in *2019 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2019, pp. 576–582. [Link] [Best Paper Finalist Award].

Honors and Awards

- **IdeaBooster Fund Award**, Venture Acceleration Unit, CUHK 2023
- **Best Poster Award**, (3/35) IEEE ICRA Workshop on Surgical Robots, London, UK 2023
- **Dr. Barbara Kwok Young Postdoctoral Researcher Travel Grants Award**, CUHK 2023
- **Best Paper Finalist Award**, (Top 10/480+), IEEE ROBIO 2019 2019
- **EMAEW Student Travel Grant**
  The 9th East Asia Mechanical & Aerospace Engineering Workshop 2019
- **PolyU Teaching Postgraduate Studentship (TPS) Scheme**, PolyU 2017–2021
- **Outstanding Undergraduate Award**, (5/250+), School of Materials & Metallurgy, WUST 2016

Research Grants

Gernal Research Fund (GRF), Research Grants Council (RGC) of Hong Kong 01/2026–12/2028
Ultrathin Intelligent Flexible Cystoscopic Robot for Early-Stage Bladder Cancer Cryotherapy in Males
PI, HKD 1,108,779 (Funded)

Guangdong Natural Science Fund – General Program 06/2025–6/2028
Guangdong Basic & Applied Basic Research Foundation
Soft Robot Physical Simulation Based on Multi-Perception and Virtual-Real Fusion
PI, CNY 100,000 (Ongoing)

Young Scientists Fund, National Natural Science Foundation of China (NSFC) 01/2025–12/2027

Coupled Tendon-driven Continuum Robots for Robot-assisted Minimally Invasive Surgery
PI, CNY 300,000 (Ongoing)

Research Direct Grant, CUHK Research Committee 01/2024–11/2025
Deployable Micro-needles on Flexible Endoscopic Robots for Transluminal Submucosal Drug Delivery
PI, HKD 150,000 (Ongoing)

International Research Exploration Seed Grant, Stanford University 07/2025–06/2026
Gecko-inspired variable stiffness flexible robot with wide-range and high-sensitivity palpation for NOTES
Co-PI, USD 25,000 (Ongoing)
PI: **Prof. Mark Cutkosky** (Fletcher Jones Professor, Dept of Mechanical Engineering, Stanford University)

IdeaBooster Fund Award, Venture Acceleration Unit, CUHK 06/2023–12/2024
Miniature Notched Tubular Soft Robots for Multimodal Endoscopy
PI, HKD 100,000 (Completed)

Selected Talks

- **Invited Speaker**, School of Mechatronic Engineering, Beijing Institute of Technology, Beijing, 11/2024
- **Invited Speaker**, IEEE ICRA 2024 Workshop: Continuum and Soft Robotics for Medical Applications with ***Rising Stars on the Stage***, Yokohama, Japan, 05/2024
- **Seminar**, "Steerable Soft-Bodied Robots for Safer Robot-Assisted Minimally Invasive Surgery", Department of Electronic Engineering, CUHK, Hong Kong, 05/2023
- **Conference Presentation**, PPS-38 Special Symposium on Soft Robotics, "Sim2Real Transfer of Soft Robotic Navigation Strategies That Learns from Visual Perception", St. Gallen, Switzerland, 05/2023
- **Conference Presentation**, IEEE/ASME AIM 2020, "Toward vision-based adaptive configuring of a bidirectional two-segment soft continuum manipulator" Boston, USA, 07/2020
- **Conference Presentation**, IEEE ROBIO 2019, "A learning-based inverse kinematics solver for a multi-segment continuum robot in robot-independent mapping" Dali, China, 12/2019
- **Workshop Presentation**, 9th EMAEW, "Collision-Free Approach for Multi-Segment Continuum Robots by Self-Motion Control in SE(2)", Korea University, Seoul, Korea, 05/2019

Media Coverage

- **TV Interview**, "Research Team from Local University Develops an Endotracheal Intubation-Assisted Robot", Episode 9, Listen To Your Body, TVB, Hong Kong, 07/2023. [Link]
- **Project Coverage**, "HK PolyU Department of Mechanical Engineering - Lab Tour", BEng (Hons) in Mechanical Engineering Programme Admission, PolyU, 2021. [Link]

Professional Services

Editorship
- **Associate Editor**, *2025 IEEE International Conference on Robotics and Automation (ICRA)*
- **Associate Editor**, *2024 IEEE International Conference on Robotics and Automation (ICRA)*
- **Early Career Editorial Board**, *Biomimetic Intelligence and Robotics*
- **Guest Editor**, Special Issue: Multimodal Deployable Flexible Robots in Medical Domains, *Actuators*

Conference/Workshop Chairs
- **Session Chair**, IEEE International Conference on Cyborg and Bionic Systems (CBS), Beijing, China, 2025 – Chaired Session: Intelligent Surgical Robots
- **Organizer & Leading Chair**, IEEE IROS 2025 — The 3rd Workshop on Continuum, Compliant, Cooperative, Cognitive Surgical Robotic Systems in the Embodied AI Era (C4SR+), Hangzhou, China, 2025
- **Organizer & Leading Chair**, IEEE ICRA 2024 — The 2nd Workshop on Continuum, Compliant, Cooperative, Cognitive Surgical Robotic Systems in the Embodied AI Era (C4SR+), Yokohama, Japan, 2024

Journal Reviewer (Web of Science ID: ABB-2998-2020)

- *IEEE/ASME Transactions on Mechatronics* (11)
- *IEEE Robotics and Automation Letters* (9)
- *IEEE Transactions on Industrial Informatics* (1)
- *IEEE Transactions on Automation Science and Engineering* (1)
- *IEEE Transactions on Industrial Electronics* (1)
- *IEEE Access* (2)
- *Research* (1)
- *Journal of Field Robotics* (2)
- *Nonlinear Dynamics* (1)
- *International Journal of Medical Robotics and Computer Assisted Surgery* (1)
- *Biomimetic Intelligence and Robotics* (1)
- *Journal of Robotics* (1)
- *Sensors* (2)
- *Machines* (1)
- *Robot Learning* (1)

Conference Reviewer

IROS'25, ICRA'25, ICSR'24, IROS'24, RCAR'24, ICRA'24, RoboSoft'23, ARM'22, ICRA'22, ICRA'21, ICAR'21, AIM'20, CASE'20, IROS'19, ROBIO'19

Departmental/University Services

Member, Chung Chi College, CUHK 2024–Present
Committee Member, Undergraduate Admission Committee, Dept Electronic Engineering, CUHK 2024
Committee Member, Staff-Student Consultative Committee, Dept Electronic Engineering, CUHK 2024
Committee Member, Teaching Lab/Project Panel, Dept Electronic Engineering, CUHK 2024
Senior Resident Tutor, CW Chu College, CUHK 2022–2024
Residential Hall Tutor, PolyU Student Halls of Residence, Homantin, PolyU 2018–2022

Teaching

ELEG4701 Intelligent Interactive Robot Practice, Course Teacher, CUHK

2024 Fall | 31 students | CTE-score: Pending
2024 Spring | 22 students | CTE-score: 5.444/6 | Dept Avg: 5.393/6
A 3-credit undergraduate major elective course about ROS, Simulation, Robot Arms, Mobile Robots, Visual sensors, Manipulation, Lidar Navigation

ELEG4998/9 Final Year Project I/II, Supervisor, CUHK

2024–25 | 2 students
Final year project for EE undergraduate students

ELEG5802 MSc Research & Development Project, Supervisor, CUHK

2024–25 | 4 students
2023–24 | 2 students (Lead to two conference papers)
2022–23 | 1 student (Co-supervisor in the capacity of a Postdoc; lead to a journal paper)
Whole year research project for EE MSc students

ME570: Advanced Product Mechatronics, MSc course, Teaching Assistant, PolyU, 2018, 2020
ME31002: Linear Systems and Control, UG course, Teaching Assistant, PolyU, 2019, 2020
ME42001: Artificial Intelligence in Products, UG course, Teaching Assistant, PolyU, 2018, 2021

Academic Advising

Research Assistants

Pengfei Ye, Research Assistant, CUHK, 2024 → M.Phil. student, HKUST
Sattar Kadir, Summer Intern, CUHK, 2024 → Ph.D. student, CUHK
Tian-Ao Ren, Research Assistant, CUHK, 2022-2023 → Ph.D. student, Stanford

M.Sc. students
Yinheng Lin, M.Sc., CUHK, Class of 2025
Jiayi Zhao, M.Sc., CUHK, Class of 2025
Wenyan Liu, M.Sc., CUHK, Class of 2024 → Project Manager, NIO Inc.
Hongyu Gen, M.Sc., CUHK, Class of 2024 → R&D Engineer, BYD
Guankun Wang, M.Sc., CUHK, Class of 2023 → Ph.D. student, CUHK

Undergraduate students
Chun Him Wong, B.Eng., CUHK, Class of 2025
Hugo Lok Him Tsang, B.Eng., CUHK, Class of 2025

Full List of Publications

Book Chapter

[1] **J. Lai**, B. Lu, and H. Ren, "Chapter 4 - kinematic concepts in minimally invasive surgical flexible robotic manipulators: State of the art," in *Handbook of Robotic Surgery*, S. de Cássio Zequi and H. Ren, Eds. Academic Press, 2025, pp. 27–41, ISBN: 978-0-443-13271-1.

Peer-Reviewed Journal Articles

[2] **J. Lai**, Y. Liu, T.-A. Ren, Y. Ma, T. Zhang, J. Y. C. Teoh, M. R. Cutkosky, and H. Ren*, "Single twistable tendon-driven continuum robots," *Science Robotics*, 2025, (Under Review).

[3] **J. Lai**, T.-A. Ren, Y. Ye Pengfei Liu, J. Sun, and H. Ren*, "Gravity-aware proactive joint-level compensation for portable soft slender robots using a single imu and real-time simulation," *The International Journal of Robotics Research*, 2025, (Under Review).

[4] L. Bai, B. Ma, R. Wang, G. Wang, B. Cui, Z. Jiang, M. Islam, Z. Min, **J. Lai**, N. Navab, and H. Ren*, "Multimodal graph representation learning for robust surgical workflow recognition with adversarial feature disentanglement," *Information Fusion*, p. 103 290, 2025, (Impact Factor: 14.7).

[5] Z. Min†, **J. Lai**†, and H. Ren*, "Innovating robot-assisted surgery through large vision models," *Nature Reviews Electrical Engineering*, vol. 2, pp. 50–363, 2025, (Featured Article).

[6] K. Huang, **J. Lai**, H. Ren, C. Wu, X. Cheng, and H. K. Chu*, "Large-scale selective micropatterning with robotics ndep tweezers and hydrogel encapsulation," *ACS Applied Materials & Interfaces*, 2024, (Impact Factor: 8.3).

[7] L. Zhao, G. Tan, **J. Lai**, C. M. Lim, W. K. Wong, H. Ren, and K. Li*, "Visual feedback predicting framework for ultrasound-assisted percutaneous kidney biopsy in 5g remote surgery," *IEEE Transactions on Mobile Computing*, 2024, (Impact Factor: 7.9).

[8] Z. Zhang, A. Zhang, **J. Lai**, H. Ren, R. Song, Y. Li, M. Q.-H. Meng, and Z. Min*, "Ghmm: Learning generative hybrid mixture models for generalized point set registration in computer-assisted orthopedic surgery," *IEEE Transactions on Medical Robotics and Bionics*, vol. 6, no. 3, pp. 1285–1295, 2024, (Impact Factor: 3.4).

[9] **J. Lai**, B. Lu, K. Huang, and H. K. Chu*, "Gesture-based steering framework for redundant soft robots," *IEEE/ASME Transactions on Mechatronics*, 2024, (Impact Factor: 6.4).

[10] Y. Yang, **J. Lai**, C. Xu, Z. He, P. Jiao, and H. Ren*, "Lightweight pneumatically elastic backbone structure with modular construction and nonlinear interaction for soft actuators," *Soft Robotics*, vol. 11, no. 1, pp. 57–69, 2024, (Impact Factor: 7.9).

[11] **J. Lai**†, T.-A. Ren†, W. Yue, S. Su, J. Y. K. Chan, and H. Ren*, "Sim-to-real transfer of soft robotic navigation strategies that learns from the virtual eye-in-hand vision," *IEEE Transactions on Industrial Informatics*, vol. 20, no. 2, pp. 2365–2377, 2024, (Impact Factor: 12.3).

[12] G. Wang, T.-A. Ren, **J. Lai**, L. Bai, and H. Ren*, "Domain adaptive sim-to-real segmentation of oropharyngeal organs," *Medical & Biological Engineering & Computing*, vol. 61, pp. 2745–2755, 2023, (Impact Factor: 3.2).

[13] M. S. Xavier, C. D. Tawk, A. Zolfagharian, J. Pinskier, D. Howard, T. Young, **J. Lai**, S. M. Harrison, Y. K. Yong, M. Bodaghi, *et al.*, "Soft pneumatic actuators: A review of design, fabrication, modeling, sensing, control and applications," *IEEE Access*, vol. 10, pp. 59 442–59 485, 2022, (Impact Factor: 3.9 & Selected as a Highly Cited Paper as of July/August 2024, Top 1% in Engineering).

[14] Q. Zhao, **J. Lai**, X. Hu, and H. K. Chu*, "Dual-segment continuum robot with continuous rotational motion along the deformable backbone," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 6, pp. 4994–5004, 2022, (Impact Factor: 6.4).

[15] Z. Cui, W. Ma, **J. Lai**, H. K. Chu*, and Y. Guo, "Coupled multiple dynamic movement primitives generalization for deformable object manipulation," *IEEE Robotics and Automation Letters*, vol. 7, no. 2, pp. 5381–5388, 2022, (Impact Factor: 5.2).

[16] **J. Lai**, B. Lu, Q. Zhao, and H. K. Chu*, "Constrained motion planning of a cable-driven soft robot with compressible curvature modeling," *IEEE Robotics and Automation Letters*, vol. 7, no. 2, pp. 4813–4820, 2022, (Impact Factor: 5.2).

[17] Q. Zhao, **J. Lai**, and H. K. Chu*, "Reconstructing external force on the circumferential body of continuum robot with embedded proprioceptive sensors," *IEEE Transactions on Industrial Electronics*, vol. 69, no. 12, pp. 13 111–13 120, 2021, (Impact Factor: 7.7).

[18] Q. Zhao, **J. Lai**, K. Huang, X. Hu, and H. K. Chu*, "Shape estimation and control of a soft continuum robot under external payloads," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 5, pp. 2511–2522, 2021, (Impact Factor: 6.4).

[19] **J. Lai**, K. Huang, B. Lu, Q. Zhao, and H. K. Chu*, "Verticalized-tip trajectory tracking of a 3d-printable soft continuum robot: Enabling surgical blood suction automation," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 3, pp. 1545–1556, 2021, (Impact Factor: 6.4).

[20] **J. Lai**, B. Lu, and H. K. Chu*, "Variable-stiffness control of a dual-segment soft robot using depth vision," *IEEE/ASME Transactions on Mechatronics*, vol. 27, no. 2, pp. 1034–1045, 2021, (Impact Factor: 6.4).

[21] K. Huang, Z. Cui, **J. Lai**, B. Lu, and H. K. Chu*, "Optimization of a single-particle micropatterning system with robotic ndep-tweezers," *IEEE Transactions on Automation Science and Engineering*, vol. 19, no. 2, pp. 818–832, 2021, (Impact Factor: 5.6).

[22] K. Huang, I. A. Ajamieh, Z. Cui, **J. Lai**, J. K. Mills, and H. K. Chu*, "Automated embryo manipulation and rotation via robotic ndep-tweezers," *IEEE Transactions on Biomedical Engineering*, vol. 68, no. 7, pp. 2152–2163, 2020, (Impact Factor: 4.6).

[23] B. Lu, X. Yu, **J. Lai**, K. Huang, K. C. Chan, and H. K. Chu*, "A learning approach for suture thread detection with feature enhancement and segmentation for 3-d shape reconstruction," *IEEE Transactions on Automation Science and Engineering*, vol. 17, no. 2, pp. 858–870, 2019, (Impact Factor: 5.6).

[24] B. Lu, H. K. Chu*, K. Huang, and **J. Lai**, "Surgical suture thread detection and 3-d reconstruction using a model-free approach in a calibrated stereo visual system," *IEEE/ASME Transactions on Mechatronics*, vol. 25, no. 2, pp. 792–803, 2019, (Impact Factor: 6.4).

[25] K. Huang, B. Lu, **J. Lai**, and H. K. H. Chu*, "Microchip system for patterning cells on different substrates via negative dielectrophoresis," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 13, no. 5, pp. 1063–1074, 2019, (Impact Factor: 5.1).

Peer-Reviewed Conference Papers

[26] Y. Wang, J. Zhao, Y. Liu, H. Gao, H. Ren*, and **J. Lai***, "Unlocking mixed reality for medical education: A see-through perspective on head anatomy," in *2025 IEEE 11th World Forum on Internet of Things (WF-IoT)*, Chengdu, China, 2025.

[27] X. He, G. Wang, J. Wang, M. Islam, S. Yuan, Z. Jiang, L. Bai, **J. Lai**, Z. Li, and H. Ren*, "Capsulenav: Translating vision and language into action for capsule endoscopy navigation," Preprint, 2025.

[28] R. Hao, **J. Lai**, W. Zhong, D. Xie, Y. Tian, T. Zhang, Y. Zhang, C. P. L. Chan, J. Y.-K. Chan, and H. Ren*, "Variable-stiffness nasotracheal intubation robot with passive buffering: A modular platform in mannequin studies," in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, Atlanta, USA, 2025.

[29] T. Zhang, Y. Yang, Y. Yang, H. Gao, **J. Lai**, and H. Ren*, "Three-dimension tip force perception and axial contact location identification for flexible endoscopy using tissue-compliant soft distal attachment cap sensors," in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, Atlanta, USA, 2025.

[30] Z. Cui, **J. Lai**, B. Lu, Y. Guo, and H. K. Chu*, "Human-led robotic transportation of elastic objects with adaptive control," in *2024 9th IEEE International Conference on Robotics and Automation Engineering (ICRAE)*, Singapore, 2024.

[31] T.-A. Ren, W. Liu, T. Zhang, L. Zhao, H. Ren*, and **J. Lai***, "Three-dimensional morphological reconstruction of millimeter-scale soft continuum robots based on dual stereo vision," in *2024 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Bangkok, Thailand, 2024.

[32] T. Zhang, S. Kadir, H. Geng, H. Pan, A. Wang, **J. Lai***, and H. Ren*, "Lightweight handheld detachable compliant robotic laryngoscope with lightweight intelligent visual guidance," in *2024 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Bangkok, Thailand, 2024.

[33] C.-K. Ng, H. Gao, T.-A. Ren, **J. Lai**, and H. Ren*, "Navigation of tendon-driven flexible robotic endoscope through deep reinforcement learning," in *2024 IEEE International Conference on Advanced Robotics and Its Social Impacts (ARSO)*, Hong Kong, China, 2024, pp. 134–139.

[34] **J. Lai**, K. Huang, B. Lu, and H. K. Chu*, "Toward vision-based adaptive configuring of a bidirectional two-segment soft continuum manipulator," in *2020 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Boston, USA, 2020, pp. 934–939.

[35] K. Huang, Z. Cui, I. A. Ajamieh, **J. Lai**, J. K. Mills, and H. K. Chu*, "Automated single-microparticle patterning system for micro-analytics," in *2020 IEEE 16th International Conference on Automation Science and Engineering (CASE)*, Hong Kong, China, 2020, pp. 390–396.

[36] **J. Lai**, K. Huang, and H. K. Chu*, "A learning-based inverse kinematics solver for a multi-segment continuum robot in robot-independent mapping," in *2019 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Dali, China, 2019, pp. 576–582. (Best Paper Finalist Award).

[37] K. Huang, H. K. Chu*, B. Lu, **J. Lai**, and L. Cheng, "Automated cell patterning system with a microchip using dielectrophoresis," in *2019 IEEE International Conference on Robotics and Automation (ICRA)*, Montréal, Canada, 2019, pp. 634–639.