

Zelin Li

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Education

- 2020 – 2026 **Ph.D. in Electrical Engineering, City University of Hong Kong, HK.**
Thesis title: *Intelligent Processing and Analysis of Caenorhabditis elegans Microscopic Images.*
- 2016 – 2020 **B.Eng. in EIE (Major), Huazhong University of Science and Technology, CN**
Thesis title: *Blockchain Architecture Design for Smart Healthcare Scenarios.*
- 2017 – 2020 **B.S. in Finance (Minor), Huazhong University of Science and Technology, CN**
Thesis title: *A Study on the Impact of FinTech on the Stock Performance of Chinese Commercial Banks: A Text-Based Analysis of Annual Reports.*

Positions and Experiences

- 2026 – Present **Research Associate** City University of Hong Kong, HK.
- 2025 – 2025 **Research Associate** CityUHK & Oxford Joint Research Center (CIMDA), HK.
- 2019 – 2020 **Blockchain Algorithm Developer (Intern)** HUST Dian Group & HK ASTRI, CN.

Honors and Academic Services

Scholarships, Awards and Entrepreneurship

- 2017 **National Encouragement Scholarship**, HUST, Ministry of Education, China.
- 2020 **Outstanding Graduate Honor**, HUST.
- Outstanding Graduation Thesis Award**, HUST.
- 2025 **HK Tech 300 Seed Fund Awardee (PIC)**, City University of Hong Kong.
- 2026 **HKSTP Ideation Programme Awardee (PIC)**, HKSTP.

Academic Services

- 2022 & 2024 **Invited Trainer**, EMBO Practical Course, European Molecular Biology Laboratory.

Research Publications

* Equal contributions # Corresponding author

Journal Articles

- 1 G. Guan*, C. Zhao*, **Z. Li***, P. Zhang, Y. Chen, P. Ye, M.-K. Wong, L.-Y. Chan, H. Yan, C. Tang, et al., “EmbSAM: Cell boundary localization and segment anything model for fast images of developing embryos,” *Communications Biology*, 2026.
- 2 G. Guan*, **Z. Li***, Y. Ma*, P. Ye*, J. Cao, M.-K. Wong, V. W. S. Ho, L.-Y. Chan, H. Yan#, C. Tang#, et al., “Cell lineage-resolved embryonic morphological map reveals signaling associated with cell fate and size asymmetry,” *Nature Communications*, 2025.
- 3 Z. Huang#, **Z. Li**, and H. Yan, “A fusion model with effective multi-scale parallel transformer for cellular segmentation,” *IEEE Transactions on Computational Biology and Bioinformatics*, 2025.
- 4 **Z. Li**#, Z. Huang, J. Cao#, G. Guan, Z. Zhao, and H. Yan, “An effective method for quantification, visualization, and analysis of 3d cell shape during early embryogenesis,” *Quantitative Biology*, 2025.

- 5 Z. Li*, D. Xie*, Y. Ma*, C. Zhao, S. You, H. Yan, and Z. Zhao#, "Deep learning-based enhancement of fluorescence labeling for accurate cell lineage tracing during embryogenesis," *Bioinformatics*, 2024.

Conference Proceedings

- 1 C. Wang*, Z. Huang*, Z. Li#, and W. Zhu, "Recover cell tensor: Diffusion-equivalent tensor completion for fluorescence microscopy imaging," in *International Conference on Learning Representations (ICLR)*, 2026.
- 2 C. Wang, Z. Wang, Z. Li#, E. Ozden-Yenigun, and H. Liu, "MSTF-Net: A UAV-Oriented multi-spectral video segmentation method via Modality-Robust, Scale-Adaptive, and consistent fusion," in *The CAAI International Conference on Artificial Intelligence (CICAI)*, 2026.
- 3 Z. Li*, C. Wang*, Z. Huang#, Y. Ma, C. Zhao, Z. Zhao, and H. Yan, "Volume tells: Dual cycle-consistent diffusion for 3d fluorescence microscopy de-noising and super-resolution," in *IEEE CVPR*, 2025.
- 4 Z. Li#, Z. Huang, and H. Yan, "3d cellular segmentation of live embryos via topologically and biologically boundary-aware semi-supervised learning," in *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2024.
- 5 Z. Li#, Z. Huang, Z. Zhu, S. You, Z. Zhao, and H. Yan, "Directional and topological transformer with topology priors for 4d cellular image segmentation," in *2024 IEEE International Conference on Image Processing (ICIP)*, 2024.

Preprints and Manuscripts under Review

- 1 X. Chen, R. Z. Li#, Z. Zhou, H. Chen, C. Wang, and X. Zhu, "Pointing-VLA: Typed spatial grounding interfaces for vision-language-action manipulation," Submitted to *AAAI 2027*, 2026.
- 2 Z. Li*, G. Guan*, X. Xian*, D. Xie, Y. Ma, S. You, Z. Zhu, D. Lee, Z. Zhang, Z. Ran, et al., "CTransformer: Deep-transformer-based 3d cell membrane tracking with subcellular-resolved molecular quantification," Under review at *Nature Methods*, 2026.
- 3 Z. Zhou, R. Z. Li#, X. Chen, J. Li, H. Chen, C. Wang, and X. Zhu, "Think only when needed: Prompt-authority control for selective slow-path intervention in vision-language-action manipulation," Submitted to *AAAI 2027*, 2026.

Patents

- 2025  **Zelin LI**, Huiming Chen, Hong Yan, Zhida Wang, Zirui Zhang, and Zhuoheng Ran (inventors). *A Method and System for Automated Construction Tender Bidding Document Generation*, U.S. patent application (pending).
Assigned to the Centre for Intelligent Multidimensional Data Analysis Limited (CIMDA), Hong Kong SAR.

Research and Industry Projects

- 2025 – Present  **AI-Tender-Writer** — Founder & Person-in-Charge.
Funded by the HK Tech 300 Seed Fund (City University of Hong Kong) and the HKSTP Ideation Programme.
Leading the R&D of a multi-agent AI system that integrates large language models, a domain knowledge graph with Graph-RAG retrieval, and reinforcement learning from expert preference to automatically generate regulation-compliant construction tender documents; outcomes include a U.S. patent application (first inventor) and conference papers under review.