Chengkun LI

Doctor of Philosophy Candidate

Department of Computer Science & Engineering,The Chinese University of Hong Kong

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Education

The Chinese University of Hong Kong — *Hong Kong SAR, China*

Ph.D. in Computer Science and Engineering — *Aug. 2022 - Present*

University College London — *London, UK*

MSc. in Computer Graphics, Vision and Imaging — *Sep. 2020 - Oct. 2021*

- Honor: Distinction Level.

Beihang University — *Beijing, China*

B.Eng. in Electrical Engineering and Automation — *Sep. 2014 - Jul. 2019*

- GPA: 3.80/4.00; Rank: 1/50

Research Interest

My research interests lie at the intersection of **3D Computer Vision** and **Surgical Robotics**, specifically focusing on 3D reconstruction, neural rendering, and generative AI for advanced surgical education.

Work Experience

The Chinese University of Hong Kong — *Hong Kong SAR, China*

Research Assistant in MedAIR Lab supervised by Prof. Qi Dou — *Dec. 2021 - Jun. 2022*

- Developed a novel AR-based remote mentoring system for robotic surgery using HoloLens, featuring efficient 3D scene streaming and real-time hand interaction to provide immersive surgical guidance.

Beihang University — *Beijing, China*

Research Assistant in PHI-AI Lab supervised by Prof. Feng Lu — *Jun. 2019 - Dec. 2019*

- Devised a predictive warping field algorithm to generate forward-looking eye imagery in collaboration with Huawei's PC Pre-Research Department, aiming to optimize video calling experiences for future Matebook deployment.

Publications

Conference Proceedings

Gaussian Splatting with Reflectance Regularization for Endoscopic Scene Reconstruction

Chengkun Li, Kai Chen, Shi Qiu, Jason Ying-Kuen Chan, Qi Dou

International Conference on Intelligent Robots and Systems (IROS), 2025. [Project]

ClipGS: Clippable Gaussian Splatting for Interactive Cinematic Visualization of Volumetric Medical Data

Chengkun Li, Yuqi Tong, Kai Chen, Zhenya Yang, Ruiyang Li, Shi Qiu, Jason Ying-Kuen Chan, Pheng-Ann Heng, Qi Dou

International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2025. (Oral) [Paper] [Project]

Journals

Virtual Reality-Based Infrared Pupillometry (VIP) for Long-COVID

Chen Hui Tang, Yi Fei Yang, Ken Chun Fung Poon, Hanson Yiu Man Wong, Kenneth Ka Hei Lai, Chengkun Li, Joey Wing Yan Chan, Yun Kwok Wing, Qi Dou, Clement Chee Yung Tham, Chi Pui Pang, Kelvin Kam Lung Chong

Ophthalmology 2025. [Paper]

Extended Reality With HMD-Assisted Guidance and Console 3D Overlay for Robotic Surgery Remote Mentoring

Chengkun Li, Yuqi Tong, Weixin Si, David Chun Man Yeung, Jason Ying-Kuen Chan, Qi Dou

IEEE Robotics and Automation Letters (RAL), 2024. [Paper] [Project]

Robotic surgery remote mentoring via AR with 3D scene streaming and hand interaction

Yonghao Long*, Chengkun Li*, Qi Dou

Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 2023. [Paper]

In Submission

SafeManip: Enhancing Robot Manipulation Safety through Context-aware Proactive Planning and Regularized Reactive Control

Chang Tu, Yiyao Ma, Chengkun Li, Kai Chen, Zelong Tan, Wei Chen, Yunhui Liu, Qi Dou
Under Review, 2025.

Geometry-Consistency Photo-realistic 3D Endoscopic Scene Generation via Shape Guidance
Chengkun Li, Kai Chen, Yuqi Tong, Shi Qiu, Jason Ying-Kuen Chan, Qi Dou
In Submission for IEEE Transactions on Medical Imaging (TMI), 2025.

Program Committees

2025 **Executive Committee**, COLAS 2025 (MICCAI Workshop)

Honors & Awards

2025 **Oral Presentation (Top 7%)**, MICCAI Conference
2023 **First Runner-up, Innovation for Health Award of Excellence**, The 5th Hong Kong Innovation Day
2022 **Strategic Research Areas Vice-Chancellor's Scholarships**, The Chinese University of Hong Kong
2021 **Distinction Honor**, University College London
2018 **Ranked First for Undergraduate Studies**, Beihang University
2018 **National Inspirational Scholarship (Top 2%)**, Beihang University
2017 **Second Prize in National Undergraduate Electronic Design Contest (Top 5%)**, China
2017 **Second Prize in Undergraduate Electronic Design Contest (Top 10%)**, Beijing