

# Qi-Long Liu

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Google Scholar  ORCID  GitHub  Homepage 

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## RESEARCH INTERESTS

3D computer vision; 4D scene reconstruction; Dense motion tracking; Spectral learning w/ deep functional maps network (FMNet); Human-computer interaction; AI for healthcare.

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## EDUCATION

<b>The Hong Kong Polytechnic University (QS #57)</b> <i>Master of Philosophy, Laboratory for Artificial Intelligence in Design (AiDLab)</i> <i>Supervised by Prof. Kit-lun Yick</i> <i>Co-supervised by Prof. Joanne Yip and Dr. Yue Sun</i>	Sep 2021 – Feb 2024 Hong Kong, China
<b>Shenzhen University (ARWU #151–200)</b> <i>Bachelor of Engineering, School of Biomedical Engineering (ARWU #24)</i> <i>Supervised by Dr. Yongjin Zhou</i>	Sep 2017 – Jul 2021 Shenzhen, China

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## AWARDS

<b>The Hong Kong Polytechnic University Research Studentship</b> <i>The Hong Kong Polytechnic University</i>	2021 – 2023
<b>Star of Double Innovations (Group Award)</b> <i>Third Prize, Shenzhen University</i>	2021
<b>National College Students Biomedical Engineering Innovation Design Competition</b> <i>Third Prize</i>	2019
<b>National College Students Electronic Design Competition</b> <i>Third Prize in Guangdong Province</i>	2019

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## PUBLICATIONS

### Journal

**Qi-Long Liu**, Kit-Lun Yick, Yue Sun, and Joanne Yip. Ultra-dense motion capture: an exploratory full-automatic approach for dense tracking of breast motion in 4d. *PLoS One*, 19(2):e0299040, 2024 (*JCR Q1, IF 2.9*)

Li-Ying Zhang, Ze-Qi Ma, Kit-Lun Yick, Pui-Ling Li, Joanne Yip, Sun-Pui Ng, and **Qi-Long Liu**. Prediction of dynamic plantar pressure from insole intervention for diabetic patients based on patch-based multilayer perceptron with localization embedding. *IEEE Access*, 2024 (*JCR Q2, IF 3.4*)

Jia-Zhen Chen, Yue Sun, **Qi-Long Liu**, Joanne Yip, and Kit lun Yick. Construction of multi-component finite element model to predict biomechanical behaviour of breasts during running and quantification of the stiffness impact of internal structure. *Biomechanics and Modeling in Mechanobiology*, 2024 (*JCR Q2, IF 3.0*)

Xi Chen, **Qi-Long Liu**, Lei Dong, Hu Tang, Tian-Fu Wang, and Si-Ping Chen. Construction of experimental teaching system of biomedical engineering for demand of industry. 2020 (*PKU Core, IF 1.7*)

## Conference

**Qi-Long Liu**, Kit-Lun Yick, Kam-Ching Chan, Sin-Tung Wong, and Sun-Pui Ng. Sports bra pressure: effect on core body temperature and comfort sensation. In *Ergonomics In Design*. AHFE International, 2022

## Thesis

**Qi-Long Liu**. Ultra-dense motion capture algorithm for breast biomechanical modelling in design of sports bras. *MPhil thesis, The Hong Kong Polytechnic University*, 2024

## WORK & RESEARCH EXPERIENCE

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<b>The Hong Kong Polytechnic University</b> <i>Research Assistant (full-time)</i> <i>Supervised by Prof. Kit-lun Yick</i> <i>3D/4D scene reconstruction/understanding, dense motion tracking, and human pose analysis</i>	Sep 2023 – Present <i>Hong Kong, China</i>
<b>Shenzhen Base of The Hong Kong Polytechnic University</b> <i>Student Assistant (part-time) for Prof. Kit-lun Yick</i> <i>Supervised by Prof. Kit-lun Yick</i> <i>3D/4D scanning data cleansing, labelling, and processing</i>	Dec 2020 – Jun 2021 <i>Shenzhen, Guangdong, China</i>
<b>Shenzhen Zhishixinyun Educational Technology Ltd.</b> <i>Cofounder and Python tutorial lecturer</i> <i>A campus startup that aims at providing short-term STEM and arts tutorials for college students</i>	Nov 2019 – Mar 2020 <i>Shenzhen, Guangdong, China</i>

## OPEN-SOURCE PROJECTS (SELECTED)

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<b>mesh4d</b> <i>Toolkit for 4D (3D + T) data visualisation, operation, and dynamic estimation</i>	2023 ( <a href="#">Link</a> )
<b>PaperThread</b> <i>Visualize papers' relations as threads</i>	2023 ( <a href="#">Link</a> )
<b>FEcluster</b> <i>Distribute FE simulation tasks across multiple computers via SSH</i>	2023 ( <a href="#">Link</a> )
<b>qilong-liu.vercel.app</b> <i>Minimalist personal blog site based on Next.js and Tailwind</i>	2023 ( <a href="#">Link</a> )
<b>pedarProbe</b> <i>Data analysis framework for pedar plantar pressure sensor</i>	2022 ( <a href="#">Link</a> )
<b>Beamer-LaTeX-Themes</b> <i>Customized beamer templates for PolyU, SZU, and more</i>	2022 ( <a href="#">Link</a> )

## SKILL SET

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### Languages

English (fluent); Mandarin (native); Cantonese (native)

### Programming

PyTorch & Python (seasoned); JavaScript & Node.js & CSS & HTML (seasoned); LLM w/ OpenAI API (seasoned); Bash shell scripting (intermediate); C/C++ (basic); Matlab (intermediate)

### Others

LaTeX (seasoned); TikZ (intermediate); Git (seasoned); Docker (basic); Next.js (seasoned); Sphinx (seasoned)