

# 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; Statistical human modeling; Human-computer interaction; AI for design.

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## EDUCATION

<b>The Hong Kong Polytechnic University (QS #57)</b> <i>Master of Philosophy, School of Fashion and Textiles and Laboratory for Artificial Intelligence in Design (AiDLab)</i> <i>Supervised by Prof. Kit-lun Yick and 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*, page 1–1, 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*)

Li-Ying Zhang, **Qi-Long Liu**, Kit-Lun Yick, Joanne Yip, and Sun-Pui Ng. Analysis of diabetic foot deformation and plantar pressure distribution of women at different walking speeds. *International Journal of Environmental Research and Public Health*, 20(4):3688, 2023

Qiu-Qiong Shi, Pui-Ling Li, Kit-Lun Yick, Jiao Jiao, and **Qi-Long Liu**. Influence of contoured insoles with different materials on kinematics and kinetics changes in diabetic elderly during gait. *International Journal of Environmental Research and Public Health*, 19(19):12502, 2022

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

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#### WORK & RESEARCH EXPERIENCE

##### The Hong Kong Polytechnic University

*Research Assistant (full-time)*

*Supervised by Prof. Kit-lun Yick*

*3D/4D scene reconstruction/understanding, dense motion tracking, and human pose analysis*

Sep 2023 – Present

*Hong Kong, China*

##### Shenzhen Base of The Hong Kong Polytechnic University

*Student Assistant (part-time) for Prof. Kit-lun Yick*

*Supervised by Prof. Kit-lun Yick*

*3D/4D scanning data cleansing, labelling, and processing*

Dec 2020 – Jun 2021

*Shenzhen, Guangdong, China*

##### Shenzhen Zhishixinyun Educational Technology Ltd.

*Cofounder and Python tutorial lecturer*

*A campus startup that aims at providing short-term STEM and arts tutorials for college students*

Nov 2019 – Mar 2020

*Shenzhen, Guangdong, China*

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#### OPEN-SOURCE PROJECTS (SELECTED)

**mesh4d** 2023

*Toolkit for 4D (3D + T) data visualisation, operation, and dynamic estimation*

([Link](#))

**PaperThread** 2023

*Visualize papers' relations as threads*

([Link](#))

**FEcluster** 2023

*Distribute FE simulation tasks across multiple computers via SSH*

([Link](#))

**qilong-liu.vercel.app** 2023

*Minimalist personal blog site based on Next.js and Tailwind*

([Link](#))

**pedarProbe** 2022

*Data analysis framework for pedar plantar pressure sensor*

([Link](#))

**Beamer-LaTeX-Themes** 2022

*Customized beamer templates for PolyU, SZU, and more*

([Link](#))

## 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); I am also a self-estimated good cook.