Curriculum Vitae
Ho Man Colman Leung

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Research Interests

My research focuses on physiological sensing for health and interaction applications. Guided by physical principles and natural phenomena, I carefully design sensors to capture high-quality signals and develop computational pipelines to extract meaningful information. Through hardware–software co-design, I integrate novel sensors, ubiquitous computing, and aesthetics into robust and reliable systems.

Education

PhD in Computer Science
Columbia University | United States — 2022 - Present
Dartmouth College | United States — 2020 - 2022
Advisor: Prof. Xia ZHOU

MPhil in Computer Science and Engineering — 2015 - 2018
The Chinese University of Hong Kong | Hong Kong
Supervisors: Prof. Chi-Wing FU and Prof. Pheng-Ann HENG
Thesis: Cross-Device Authentication via Motion Co-analysis with a Smartwatch in a Multi-user Multi-device Environment

BSc in Computer Science — 2009 - 2012
The Chinese University of Hong Kong | Hong Kong

Publications

Clinical evaluation of a polarization-based optical noninvasive glucose sensing system
Ho Man Colman LEUNG, Chengyue Gong, Luke Geiser, Emily E Fivekiller, Nam Bui, Tam Vu, Temiloluwa Prioleau, Gregory P Forlenza, Qiang Liu, Xia Zhou
Scientific Reports 15.1 (2025): 8877.

My Pillow Knows My Sleep: Sleep Monitoring with Computational Fabrics in the Pillowcase
Qijia Shao, Junxiao Chen, Ho Man Colman Leung, Meiqi Zhao, Ruoyu Xu, Jiting Liu, Lisa Maria DiSalvo García, Xiaofan Jiang, Marie-Pierre St-Onge, Xia Zhou
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies 9.3 (2025): 1-26.

Fabric Sensing of Intrinsic Hand Muscle Activity
Katelyn Lee, Runsheng Wang, Ava Chen, Lauren Winterbottom, Ho Man Colman Leung, Lisa Maria DiSalvo, Iris Xu, Jingxi Xu, Dawn M Nilsen, Joel Stein, Xia Zhou, Matei Ciocarlie
2025 International Conference On Rehabilitation Robotics (ICORR). IEEE, 2025.

Joey: supporting kangaroo mother care with computational fabrics
Qijia Shao, Jiting Liu, Emily Bejerano, Ho Man Colman Leung, Jingping Nie, Xiaofan Jiang, Xia Zhou
Proceedings of the 22nd Annual International Conference on Mobile Systems, Applications and Services. 2024.

Noninvasive glucose sensing in vivo
Ho Man Colman LEUNG, Gregory P Forlenza, Temiloluwa O Prioleau, Xia Zhou
Sensors 23.16 (2023): 7057.

A Portable Solution to Noninvasive Glucose Sensing with Light

Ho Man Colman Leung, Tianxing Li, Temiloluwa Prioleau, Tam Vu, Gregory Forlenza, Xia Zhou

Adjunct Proceedings of the 2022 ACM International Joint Conference on Pervasive and Ubiquitous Computing and the 2022 ACM International Symposium on Wearable Computers. 2022.

TwistIn: Tangible Authentication of Smart Devices via Motion Co-analysis with a Smartwatch

Ho Man Colman Leung, Chi-Wing Fu, and Pheng-Ann Heng

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies 2.2 (2018): 72.

Stereoscopic Three-Dimensional Visualization for Immersive and Intuitive Anatomy Learning

Kup-Sze Choi, Shu-Ting Chan, Ho Man Colman Leung, and Yim-Pan Chui

IEEE International Conference on Technology for Education (T4E 2016).

Teaching	**CSEE4119 Computer Networks - Teaching Assistant** | Columbia University	Spring 2024 & Spring 2025
	CS60 Computer Networks - Teaching Assistant | Dartmouth College	Spring 2021
	Final Year Project Tutor | CUHK	Fall 2016 - Spring 2017
	CSCI3260 Principle of Computer Graphics - Teaching Assistant | CUHK	Spring 2016

- Awarded the Certificate of Merit

	CSCI1130 Introduction to Computing using Java - Teaching Assistant | CUHK	Fall 2015

Work Experience

Research Associate   2018 - 2020

Department of Computer Science and Engineering, CUHK \| Hong Kong

- Developed a robust multi-camera, multi-object 6DoF real-time tracking system for medical simulators, with performance boosted through CUDA parallelization and pipelined execution.

Software Engineer   2012 - 2015

Dracaena Life Technologies Co., Ltd. \| Hong Kong

- Designed an anatomy visualization tool with stereoscopic 3D and Leap Motion mid-air gestures for immersive learning; deployed at PolyU School of Nursing with positive user study results.
- Developed a Traditional Chinese Acupuncture Simulation System by extending an Interventional Sonography Trainer, adding rotary encoders and Arduino-based sensors to capture needle rotation.
- Implemented stereoscopic rendering and head tracking 3D simulation using Kinect.

Skills

Software Development

Programming: C, C++, C#, Objective-C, Java, Python, MATLAB, GLSL

Libraries: OpenGL, OpenCV, Boost, CUDA, TensorFlow, PyTorch

Platforms: iOS, Android, Windows, Arduino, Unity, Web

Hardware Fabrication

Design Tools: Autodesk Fusion, Inkscape

Techniques: 3D Printing, Soldering, PCB Design, Embroidery

Designing

Adobe Creative Suite (Photoshop, Illustrator, InDesign, Premiere Pro, After Effects)

Spoken Languages

Cantonese, English, Mandarin, Spanish (Duolingo beginner)

Interests   Dragon Boat, Badminton, Piano, Cello, Graphic Design