Ho Man Colman Leung

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Research Interests

To make computers more accessible to users by understanding human behaviors from the computer's perspective and providing a tailor-made experience to users through combining sensing technology, ubiquitous computing, and aesthetic into novel interaction systems.

Work Experience

Research Associate — 2018 - Present
Department of Computer Science and Engineering, CUHK | Hong Kong

- Developing a robust multi-camera multi-object 6DoF real-time tracking system for precise tangible interactions used in medical simulators.
- Improved tracking performance by parallelizing the algorithms, accelerating with CUDA, and overlapping the operations with pipelining.
- Achieved over 60 frame rate for tracking two small objects accurately within a 60 x 60 cm^2 area.

Software Engineer — 2012 - 2015
Dracaena Life Technologies Co., Ltd. | Hong Kong

- Developed a Stereoscopic Anatomy Visualization Tool for educational purposes, featuring an immersive 3D environment through head tracking with Kinect and mid-air gesture interaction using Leap Motion. It is deployed in the Faculty of Health and Social Sciences of The Hong Kong Polytechnic University with a user study showing positive feedback.
- Developed a Traditional Chinese Acupuncture Simulation System based on an existing Interventional Sonography Training System. The original biopsy needle is modified to measure the needle's rotation using rotary encoders and Arduino microcontrollers.

Android App Developer — 2014
MCScanner - A Side Project

- Developed *MCScanner*, an android app which can scan multiple-choice papers and generate spreadsheets to speed up the grading process for teachers. Scanned images were processed with OpenCV library which was called through JNI.

Freelance Graphic Designer — 2014
Asia Food Expo (Spring)

- Designed all advertising materials for the event including a new logo, leaflets, newspaper ads, signages and other booth decorations using graphic design software.

Education

MPhil in Computer Science and Engineering — 2015 - 2018
The Chinese University of 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

Summer Exchange Program — 2011
University of California, Berkeley

Publications	**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. Presented in UbiComp 2018.

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

Final Year Project Tutor	Fall 2016 - Spring 2017
CSCI3260 Principle of Computer Graphics Teaching Assistant	Spring 2016

- Awarded the Certificate of Merit

CSCI1130 Introduction to Computing using Java Teaching Assistant	Fall 2015

Certificates, Prizes, and Scholarships

Champion in 61st HK Schools Music Festival	2009

Secondary School Chinese Orchestra (Intermediate) Section

Gold Award for Volunteer Services	2008

Presented in appreciation of the volunteer's contribution of 200 hours of volunteer service to the community

Silver Trophy in 2008 HK Youth Music Interflow	2008

Chinese Orchestra Contest

KCOBA Leung Fung Ki Scholarship	2007-2008

Awarded to the student who has demonstrated evidence of participation in serving the school

Bronze Award for Volunteer Services	2004

Presented in appreciation of the volunteer's contribution of 50 hours of volunteer service to the community

Extra-curricular activities

University Dragon Boat Team Executive Committee Member	2015 - 2017
Chung Chi College 60th Anniversary Publish & Design Team Leader	2011
Ching Chi College Singing Contest Organizing Committee Member	2010
Chung Chi College 59th Anniversary Carnival Organizing Committee Core Member	2010
Chung Chi College 58th Anniversary Thousand People Feast Organizing Committee Core Member	2009
Madam S. H. Hall Association Public Relations Manager	2009 - 2010
King's College School Magazine Editorial Board Chief Designer	2007 - 2008
King's College Student Union Open Day Organizing Committee Chief Designer	2007 - 2008
King's College Student Union Welfare Committee Member	2007 - 2008
King's College Social Service Group Member	2007 - 2008
King's College Fig Boy Scheme Member	2007 - 2008
King's College Ferguson House Designer	2007 - 2008
King's College Music Association Designer	2007 - 2008
King's College Sports Council Designer	2007 - 2008
King's College Chinese Orchestra Member	2006 - 2009
King's College School Orchestra Member	2003 - 2008

Community Service	**Sri Lanka Service Trip**	Fall 2011

Taught English to students in a primary school, helped paint the school building, and visited patients of a children hospital.

Fig Boy Scheme 2008-2009

Helped students to familiarize with the school's environment by organizing activities for form one students and meeting them during recess and lunchtime.

Hong Kong Red Cross John F. Kennedy Centre Project 2007-2008

Visited the Hong Kong Red Cross John F. Kennedy Centre regularly and held activities for the disabled students.

King's College Social Service Group 2007-2008

Visited the home for the elderly, and raised money for The Boys' and Girls' Clubs Association of Hong Kong through flag-selling.

Skills

Programming Languages: C, C++, C#, Objective-C, Java, Python, MATLAB, GLSL, Latex, HTML5, CSS, JavaScript, PHP, SQL, PERL
Libraries and Platforms: OpenCV, OpenGL, OpenGV, Boost, CUDA, Tensorflow
App Development: iOS, Android, Windows, Arduino, Unity
Graphic Design Softwares: Adobe Creative Suite (Photoshop, Illustrator, InDesign)
Spoken Languages Cantonese, English, Mandarin

Interests

Dragon Boat, Badminton, Piano, Cello, Graphic Design