Curriculum Vitae

KWAN, Kin Chung (KC)

Researcher – CG & HCI

I am a researcher in Computer Graphics (CG) and a Ph.D. in Computer Science from the Chinese University of Hong Kong in 2015. My research experience is in Non-Photorealistic Rendering (NPR), augmented reality as well as Human-Computer Interaction (HCI) for 11+ years. I published multiple technical research papers in top conferences and journals, such as SIGGRAPH (Asia), TVCG, CGF, and CHI. I have experience of lecturing and was a teaching assistant for nine different courses, such as multimedia and game development.

Date of Birth
5 Aug 1987

Gender
Male

Address
Konstanz, Germany

Preferred Start Date
2023

Nationality
Chinese (Hong Kong)
British Nationals (Overseas)

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Research Interests

Visual computing, computer graphics, human-computer interaction, non-photorealistic rendering, augmented reality

Education

2009 – 2015 **Ph.D. in Computer Science and Engineering**
The Chinese University of Hong Kong, Hong Kong
- Supervisor: Prof. Tien-Tsin Wong
- Dated: 3 Dec 2015

2006 – 2009 **B.Sc. in Computer Science**
The Chinese University of Hong Kong, Hong Kong
- With Honours, Second Class Upper Division
- Dated: 10 Dec 2009

Academic Experiences

2020 – present **Postdoctoral Research Fellow**
University of Konstanz, Germany
- Supervisor: Prof. Oliver Deussen
- First author paper in SIGGRAPH Asia
- Co-author paper in SA Technical Communications and CVM
- Working on image abstraction using non-photorealistic rendering, and study perception of non-photorealistic rendering

2018 – 2020 **Senior Research Assistant**
2017 – 2018 **Postdoctoral Research Fellow**
City University of Hong Kong, Hong Kong
- Supervisor: Prof. Hongbo Fu
- First author papers in SIGGRAPH, SIGCHI, CGF

- Co-author paper in TVCG
- Working of human-computer interaction, AR, and sketching

2015 – 2017 **Research Fellow**
2014 – 2015 **Research Assistant**
Caritas Institute of Higher Education, Hong Kong

- Supervisor: Prof. Wai Man Pang
- First author papers in SIGGRAPH Asia, TVCG
- Working on 2D shape analysis, and internet of thing (IoT)

2013 – 2014 **Research Assistant**
The Chinese University of Hong Kong, Hong Kong

- Supervisor: Prof. Tien-Tsin Wong
- Ph.D. study period
- Working on 2D shape analysis, and 3D data compression in GPU

Publications

Published

- **Autocomplete Repetitive Stroking with Image Guidance** (2021). Y. Chen, K.C. Kwan, L.Y. Wei, and H. Fu. In *SIGGRAPH Asia 2021 Technical Communications*, Tokyo, Japan, ACM, December 2021.
- **Multi-class Inverted Stippling** (2021), C. Schulz, K.C. Kwan (joint first author), M. Becher, D. Baumgartner, G. Reina, O. Deussen, and D. Weiskopf. In *ACM Transactions on Graphics (SIGGRAPH Asia 2021 issue).* ACM, 40 (2021), 6. - 245.
- **3D Curve Creation on and around Physical Objects with Mobile AR** (2021), H. Ye, K.C. Kwan, and H. Fu. In *IEEE Transactions on Visualization & Computer Graphics* (TVCG), IEEE, 01: 1-1.
- **Automatic Image Checkpoint Selection for Guider-Follower Pedestrian Navigation** (2020), K.C. Kwan, and H. Fu. In *Computer Graphics Forum (CGF),* Wiley, Vol. 40, No. 1, pp. 357-368.
- **ARAnimator: in-situ character animation in mobile AR with user-defined motion gestures** (2020), H. Ye, K.C. Kwan (joint first author), W. Su, and H. Fu. In ACM Transactions on Graphics *(SIGGRAPH 2020 issue)*, ACM, 39(4), 83-1.
- **Mobi3DSketch: 3D Sketching in Mobile AR** (2019), K.C. Kwan and H. Fu. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI).* ACM, p. 176.
- **Occlusion-robust bimanual gesture recognition by fusing multi-views** (2019). G. Poon, K.C. Kwan, and W.-M. Pang, In *Multimedia Tools and Applications.* 78, 23469–23488.
- **Real-time Multi-view Bimanual Gesture Recognition** (2018), G. Poon, K.C. Kwan, and W.-M. Pang, In *IEEE 3rd International Conference on Signal and Image Processing (ICSIP),* IEEE, pp. 19-23.
- **Packing Vertex Data into Hardware-Decompressible Textures** (2017), K.C. Kwan, X. Xu, L. Wan, T.-T. Wong, and W.-M. Pang, In *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, IEEE, 24.5: 1705-1716.
- **Where2Buy: A Location-Based Shopping App with Products-wise Searching** (2017), K.C. Chan, T. L. Cheung, S. H. Lai, K. C. Kwan, H. Yue, and W.-M. Pang. In *IEEE International Symposium on Multimedia (ISM)*, 2017, pp. 438-443.
- **Towards Using Tiny Sensors with Heat Balancing Criteria for Child Care Reminders** (2016) G. Poon,

K.C. Kwan, W.-M. Pang, and K.-S. Choi. In *International Journal of Semantic Computing*, 10(3), 365-378.

- **Towards Using Tiny Multi-Sensors Unit for Child Care Reminders** (2016) G. Poon, K.C. Kwan, W.-M. Pang, and K.-S. Choi. In *IEEE 2nd International Conference on Multimedia Big Data (BigMM). IEEE, p. 372-376 5 p. 7545052.*
- **A Two-Phase Space Resection Model for Accurate Topographic Reconstruction from Lunar Imagery with Pushbroom Scanners** (2016), X. Xu, H. Zhang, G. Han, K.C. Kwan, W.-M. Pang, J. Fang, and G. Zhao. In *Sensors*, 16(4):507.
- **A Mobile Adviser of Healthy Eating by Reading Ingredient Labels** (2016), M.W. Wong, Q. Ye, Y. K. Chan Kylar, W.-M. Pang, and K.C. Kwan. In *International Conference on Wireless Mobile Communication and Healthcare,* Springer, pp. 29-37.
- **Pyramid of Arclength Descriptor for Generating Collage of Shapes** (2016), K.C. Kwan, C. Han, L.-T. Sinn, T.-T. Wong, and C.-W. Fu. In *ACM Transactions on Graphics (SIGGRAPH Asia 2016 issue)*, ACM, 35(6), 229.
- **Locally Scale-Invariant Descriptor for 2D Whole-Shape and Partial-Shape Matching** (2015), K.C. Kwan, *Ph.D. Thesis*, Department of Computer Science & Engineering, The Chinese University of Hong Kong.

Patent

- **Three-Dimensional Sketching in Mobile Augmented Reality** (2019), H. Fu and K.C. Kwan, *U.S. Patent No. 11,087,561*. Washington, DC: U.S. Patent and Trademark Office.

Unpublished

- **[Title hidden]** (2022). Y. Chen, K.C. Kwan, L.Y. Wei, and H. Fu. Accepted in *Computational Visual Media Conference (CVM)* and recommended for publication in *Computational Visual Media (CVMJ).*
- **I Image Abstraction for Region Based Robotic Painting.** M. Gülzow, K.C. Kwan, and O. Deussen. *In preparation for resubmission*.

Teaching Experiences

Teacher

University of Konstanz, Germany

2021 – present Illustrative Computer Graphics (Bachelor)
Designed syllabus for a winter semester course in university, prepare lecture materials with existing slides, and present the materials in English during lecture

The Hong Kong Jockey Club, Hong Kong

2015 CUDA Training (Industry)
Designed syllabus for 4-week CUDA Programming course, preparing lesson materials from scratch for the training and presented the material in Cantonese

Teaching Assistant

University of Konstanz, Germany

2020 – present Current Trends in Computer Graphics (Graduate)

The Chinese University of Hong Kong, Hong Kong

2015 – 2018 Web-Based Graphics and Virtual Reality (Graduate)
2014 – 2017 Mobile Apps Design and Implementation (Graduate)
2013 – 2019 Computer Game Software Production (Graduate)
2013 Multimedia Technology (Graduate)
2011 – 2012 Advanced GPU Programming (Graduate)
2010 – 2011 Introduction to Multimedia Systems (Bachelor)
2010 Principles of Computer Game Software (Bachelor)
2009 Introduction to Computing Using Java (Bachelor)

Languages

Cantonese ■■■■■ English ■■■■□ Mandarin ■■■■□
Japanese ■■□□□ German ■□□□□

Professional Activates

Helper: Pacific Graphics 2018

Organizers: IEEE International Workshop on Intelligent Multimedia Applications and Design for Quality Living 2017

Reviewer: CADCG, CAG, CGASI, CGI, Chinagraph, EG, GMP, HIS, ICSC, ICSPCC, IJIET, IMAD, ISCMA, PG, SIGCHI, SIGGRAPH (Asia), TVCJ, UIST

Funding: UGC/FDS11/E03/15 Vision-based Two-hand Gesture Recognition and Evaluation System for Healthcare Training, 2015/16, Hong Kong
Project Leader: Dr. PANG Wai-man

Awards

2009 - 2011 Postgraduate Studentship
2010 Excellent Teaching Assistantship
2009 Shaw College, Academic Merit

Skills / Experiences

Programming Language: C/C++, Swift, Java, Python, MATLAB, HTML, JavaScript, Objective-C, C#
Graphics interface: OpenGL, OpenCV, Qt
GPU Programming: CUDA, GLSL, OpenCL
Machine Learning: TensorFlow
Application Tools: iOS App, ARKit, Amazon MTurk
Game Engine: Unreal, Unity

Other Activates

- Practical Grade Piano exams (Grade 8, 2007)
- Theory of Music (Grade 5, 2002)
- Japanese Language Proficiency Test (N3, 2013)
- Archery (Member of The Chinese University of Hong Kong Archery Club)
- Kendo (Member of Kentokukai Kendo Club)

Hobby: Computing, Reading, Video game, Puzzle game, Jogging