

# 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.

<b>Date of Birth</b>	<b>Gender</b>	<b>Address</b>	<b>Preferred Start Date</b>	<b>Nationality</b>
5 Aug 1987	Male	Konstanz, Germany	2023	Chinese (Hong Kong) British Nationals (Overseas)
<b>Email</b>	<b>Google Scholar</b>	<b>Webpage</b>	<b>Phone</b>	
kckwan@ieee.org	<a href="https://scholar.google.com/citations?user=IxV7fuwAAAAJ">https://scholar.google.com/citations?user=IxV7fuwAAAAJ</a>	kckwan.github.io	(HK) +852-91887480 (DE) +49-16099212145	

### Research Interests

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

### Education

- |             |  |
|-------------|--|
| 2009 – 2015 | <b>Ph.D. in Computer Science and Engineering</b><br>The Chinese University of Hong Kong, Hong Kong <ul style="list-style-type: none"><li><u>Supervisor</u>: Prof. Tien-Tsin Wong</li><li>Dated: 3 Dec 2015</li></ul> |
| 2006 – 2009 | <b>B.Sc. in Computer Science</b><br>The Chinese University of Hong Kong, Hong Kong <ul style="list-style-type: none"><li>With Honours, Second Class Upper Division</li><li>Dated: 10 Dec 2009</li></ul>              |

### Academic Experiences

- |                |   |
|----------------|---|
| 2020 – present | <b>Postdoctoral Research Fellow</b><br>University of Konstanz, Germany <ul style="list-style-type: none"><li><u>Supervisor</u>: Prof. Oliver Deussen</li><li>First author paper in SIGGRAPH Asia</li><li>Co-author paper in SA Technical Communications and CVM</li><li>Working on image abstraction using non-photorealistic rendering, and study perception of non-photorealistic rendering</li></ul> |
| 2018 – 2020    | <b>Senior Research Assistant</b>  |
| 2017 – 2018    | <b>Postdoctoral Research Fellow</b><br>City University of Hong Kong, Hong Kong <ul style="list-style-type: none"><li><u>Supervisor</u>: Prof. Hongbo Fu</li><li>First author papers in SIGGRAPH, SIGCHI, CGF</li></ul>  |

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

---

2015 – 2017	<b>Research Fellow</b>
2014 – 2015	<b>Research Assistant</b>
	Caritas Institute of Higher Education, Hong Kong
	<ul style="list-style-type: none"> <li>• <u>Supervisor</u>: Prof. Wai Man Pang</li> <li>• First author papers in SIGGRAPH Asia, TVCG</li> <li>• Working on 2D shape analysis, and internet of thing (IoT)</li> </ul>

---

2013 – 2014	<b>Research Assistant</b>
	The Chinese University of Hong Kong, Hong Kong
	<ul style="list-style-type: none"> <li>• <u>Supervisor</u>: Prof. Tien-Tsin Wong</li> <li>• Ph.D. study period</li> <li>• Working on 2D shape analysis, and 3D data compression in GPU</li> </ul>

## Publications

---

### Published

---

- **Autocomplete Repetitive Stroking with Image Guidance** (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).
- **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

---

- **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, IJIT, IMAD, ISMA, 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