

# Weikai Chen

SENIOR RESEARCH SCIENTIST, TENCENT AMERICA

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## POSITIONS

<b>Tencent America, U.S.A</b> <i>Senior Research Scientist, Gaming AI Research Center</i>	Sep. 2019 - Present
<b>USC Institute for Creative Technologies, U.S.A</b> <i>Research Associate, Vision and Graphics Lab</i>	Jan. 2019 - Sep. 2019
<i>Postdoctoral Researcher, Vision and Graphics Lab</i>	Jun. 2017 - Jan. 2019
<b>INRIA, France</b> <i>Visiting Researcher, Alice Team</i>	Jun. 2016 - Aug. 2016

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## EDUCATION

<b>The University of Hong Kong, Hong Kong</b> - <i>Ph.D. in Computer Graphics</i> , advised by Prof. Wenping Wang,	Apr. 2013 - Apr. 2017
<b>Tianjin University, Tianjin, China</b> - <i>Mphil. in Wireless Communication</i> ,	Sep. 2010 - Feb. 2013
- <i>B.S. in Electronic Engineering</i> ,	Sep. 2006 - Jul. 2010

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## RESEARCH INTERESTS

Computer graphics, computer vision and deep learning: face/hair/body modeling and reconstruction, 3D vision, 3D deep learning, differentiable rendering, deep generative models, pattern/texture synthesis, digital geometry processing, computational fabrication.

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## PUBLICATIONS

- [21] Kyle Olszewski, Duygu Ceylan, Jun Xing, Jose I. Echevarria, Zhili Chen, Weikai Chen, Hao Li, “Intuitive, Interactive Beard and Hair Synthesis with Generative Models”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.
- [20] Shichen Liu, Shunsuke Saito, Weikai Chen, Hao Li, “Learning to Infer Implicit Surfaces without 3D Supervision”, *Neural Information Processing Systems (NeurIPS)*, 2019.
- [19] Shichen Liu, Tianye Li, Weikai Chen, Hao Li, “Soft Rasterizer: A Differentiable Renderer for Image-based 3D Reasoning”, *International Conference on Computer Vision (ICCV)*, 2019, **Oral. – Accepted with 3 Strong Accepts**
- [18] Yajie Zhao\*, Zeng Huang\*, Tianye Li, Weikai Chen, Chloe LeGendre, Xinglei Ren, Ari Shapiro, Hao Li, “Learning Perspective Undistortion of Portraits”, *International Conference on Computer Vision (ICCV)*, 2019, **Oral**.
- [17] Junyi Pan, Xiaoguang Han, Weikai Chen, Jiapeng Tang, Kui Jia, “Deep Mesh Reconstruction from Single RGB Images via Topology Modification Networks e”, *International Conference on Computer Vision (ICCV)*, 2019.
- [16] Jun Xing, Koki Nagano, Weikai Chen, Haotian Xu, Li-Yi Wei, Jingwan Lu, Byungmoon Kim, Yajie Zhao, Hao Li, “HairBrush for Immersive Data-Driven Hair Modeling”, *ACM Symposium on User Interface Software and Technology (UIST)*, 2019.
- [15] Ryota Natsume, Shunsuke Saito, Zeng Huang, Weikai Chen, Chongyang Ma, Hao Li, Shigeo Morishima, “SiCloPe: Silhouette-Based Clothed People”, *IEEE Conference on Computer Vision*

and Pattern Recognition (**CVPR**), 2019, Oral. – **CVPR Best Paper Finalists**

[14] Yajie Zhao, Qingguo Xu, *Weikai Chen*, Jun Xing, Chao Du, Xinyu Huang, Ruigang Yang, “Mask-off: Synthesizing Face Images in the Presence of Head-mounted Displays”, *IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)*, 2019.

[13] Zeng Huang, Tianye Li, *Weikai Chen*, Yajie Zhao, Jun Xing, Chloe LeGendre, Linjie Luo, Chongyang Ma and Hao Li, “Deep Volumetric Video From Very Sparse Multi-View Performance Capture”, *European Conference on Computer Vision (ECCV)*, 2018.

[12] Yi Zhou, Liwen Hu, Jun Xing, *Weikai Chen*, Han-Wei Kung, Xin Tong, and Hao Li, “HairNet: Single-View Hair Reconstruction using Convolutional Neural Networks”, *European Conference on Computer Vision (ECCV)*, 2018.

[11] Shugo Yamaguchi, Shunsuke Saito, Koki Nagano, Yajie Zhao, *Weikai Chen*, Shigeo Morishima and Hao Li, “High-Fidelity Facial Reflectance and Geometry Inference From an Unconstrained Image”, *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018)*.

[10] Loc Huynh, *Weikai Chen*, Shunsuke Saito, Jun Xing, Koki Nagano, Andrew Jones, Hao Li and Paul Debevec, “Mesoscopic Facial Geometry inference Using Deep Neural Networks”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018, **Spotlight**.

[9] Yajie Zhao, *Weikai Chen*, Jun Xing, Xiaoming Li, Zach Bessinger, Fuchang Liu, Wangmeng Zuo and Ruigang Yang, “Identity Preserving Face Completion for Large Ocular Region Occlusion”, *British Machine Vision Conference (BMVC)*, 2018.

[9] *Weikai Chen*, Xiaoguang Han, Guanbin Li, Chao Chen, Jun Xing, Yajie Zhao and Hao Li, “Deep RBFNet: Point Cloud Feature Learning using Radial Basis Functions”, arXiv:1812.04302, 2018.

[7] *Weikai Chen*, Yuexin Ma, Sylvain Lefebvre, Shiqing Xin, Jons Martnez and Wenping Wang, “Fabricable Tile Decors,” *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia)*, 2017.

[6] Jonathan Palacios, Lawrence Roy, Prashant Kumar, Chen-Yuan Hsu, *Weikai Chen*, Chongyang Ma, Li-Yi Wei and Eugene Zhang, “Tensor Field Design in Volumes”, *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia)*, 2017.

[5] *Weikai Chen*, Xiaolong Zhang, Shiqing Xin, Yang Xia, Sylvain Lefebvre and Wenping Wang, “Synthesis of Filigrees for Digital Fabrication”, *ACM Transactions on Graphics (Proceedings of SIGGRAPH)*, 2016.

[4] Hui Zhang, *Weikai Chen*, Bin Wang, and Wenping Wang, “By Example Synthesis of Three-Dimensional Porous Materials”, *Computer Aided Geometric Design (GMP)*, 2017.

[3] Jonathan Palacios, Chongyang Ma, *Weikai Chen*, Li-Yi Wei, and Eugene Zhang, “Tensor Field Design in Volumes”, *SIGGRAPH Asia Technical Briefs*, 2016.

[2] *Weikai Chen*, and Yunhui Chen, “Second-order Differential based Matching Pursuit Method for Compressive Sensing Signal Recovery”, in *International Conference on Wireless Communications and Signal Processing (WCSP)*, 2012.

[1] Kaihua Liu, *Weikai Chen\** and Yongtao Ma, “A compressive sensing method for estimating doubly-selective sparse channels in OFDM system”, *Journal of Tianjin University*, Dec. 2012.

\* indicates corresponding author.

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## PROFESSIONAL ACTIVITIES

### Program Committee:

- AAAI 2020
- Computational Visual Media Conference (CVM) 2019, 2020
- IEEE Artificial Intelligence & Virtual Reality (AIVR 2019)
- Shape Modeling International (SMI) - Fabrication and Sculpting Event 2019
- Pacific Graphics 2018

### Reviewer:

- ICCV 2019
- CVPR 2019, 2020
- ACM SIGGRAPH Asia 2017, 2019
- IEEE Transactions on Visualization and Computer Graphics
- International Conference on 3D Vision (3DV) 2018
- Pacific Graphics 2015, 2018
- Computer Aided Geometric Design
- ACM Symposium on Virtual Reality Software and Technology 2018
- International Conference on Machine Vision Applications (MVA) 2019
- The Visual Computer Journal
- Graphical Models
- IEEE Signal Processing Letters
- Algorithms
- Workshop on 3D Reconstruction in the Wild 2018, 2019

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## AWARDS

CVPR Best Paper Finalist,	2019
HKU Postgraduate Scholarship,	2013 - 2017
National Scholarship by Ministry of Education,	2012
Champion of Presentation in Joint-Hall Academic Symposium,	2015
Champion of Presentation in 4th Morrison Hall Academic Symposium,	2014
First-Class Postgraduate Scholarship,	2010 - 2013
Huawei Scholarship,	2008
Outstanding Student of Tianjin University,	2006 - 2010

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## TEACHING

Teaching Assistant, The University of Hong Kong - COMP7507: Visualization and Visual Analytics	2014 - 2016
Teaching Assistant, The University of Hong Kong - CS1117A: Computer Programming	2013 - 2014

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## SKILLS

**Programming:** C/C++, Python, Matlab, Lua, Mel; OpenGL/CV, Tensorflow, Pytorch, Caffe  
**Languages:** Mandarin Chinese (native), English (professional), Cantonese (professional)