Weikai Chen

Senior Research Scientist, Tencent America

12015 Waterfront Drive
USC Institute for Creative Technologies
Los Angeles, CA, U.S.A.
chenwk891@gmail.com | weikaichen@tencent.com
Webpage : http://chenweikai.github.io/

Positions

Tencent America, U.S.A
Senior Research Scientist, Gaming AI Research Center — Sep. 2019 - Present

USC Institute for Creative Technologies, U.S.A
Research Associate, Vision and Graphics Lab — Jan. 2019 - Sep. 2019
Postdoctoral Researcher, Vision and Graphics Lab — Jun. 2017 - Jan. 2019

INRIA, France
Visiting Researcher, Alice Team — Jun. 2016 - Aug. 2016

Education

The University of Hong Kong, Hong Kong
- *Ph.D. in Computer Graphics*, advised by Prof. Wenping Wang, — Apr. 2013 - Apr. 2017

Tianjin University, Tianjin, China
- *Mphil. in Wireless Communication*, — Sep. 2010 - Feb. 2013
- *B.S. in Electronic Engineering*, — Sep. 2006 - Jul. 2010

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.

Publications

[20] Shichen Liu, Shunsuke Saito, Weikai Chen, Hao Li, "Learning to Infer Implicit Surfaces without 3D Supervision", *Conference and Workshop on 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* (corresponding author) and Yongtao Ma, "A compressive sensing method for estimating doubly-selective sparse channels in OFDM system", *Journal of Tianjin University*, Dec. 2012.

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

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

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

Skills

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