

Xiaoguang Han

Assistant Professor

Add: Room 216, Daoyuan Building, the Chinese University of Hong Kong, Shenzhen

Tel: +86(13538034574)

Email: hanxiaoguang@cuhk.edu.cn

Homepage:

<https://mypage.cuhk.edu.cn/academics/hanxiaoguang/>



Research Interests

Computer Vision, Computer Graphics, Machine Learning, Medical Image Processing, etc.

Education

- 2013.08 - 2017.09 **Ph.D.** in Computer Science, The University of Hong Kong (Supervisor: Prof. Yizhou Yu)
- 2009.09 - 2011.07 **M.Sc.** in Applied Mathematics, Zhejiang University (Supervisor: Prof. Ligang Liu)
- 2005.09 - 2009.07 **B.Sc.** in Information and Computation Science, Nanjing University of Aeronautics and Astronautics (Ranking: 1st/115)

Academic Experience

- 2020.08 - present **Assistant Professor / Research Scientist**, The Chinese University of Hong Kong, Shenzhen / Shenzhen Research Institute of Big Data
- 2017.10 - 2020.07 **Research Assistant Professor / Research Scientist**, The Chinese University of Hong Kong, Shenzhen / Shenzhen Research Institute of Big Data
- 2011.08 - 2013.08 **Research Associate**, School of Creative Media, City University of Hong Kong

Selected Publications

* Joint first authors # Corresponding author

- NeuIPS 2020** Yinyu Nie, Yiqun Lin, **Xiaoguang Han#**, Shihui Guo, Jian Chang, Shuguang Cui, Jianjun Zhang, Skeleton-bridged Point Completion: From Global Inference to Local Adjustment.
- ECCV 2020** Heming Zhu*, Yu Cao*, Hang Jin*, Weikai Chen, Dong Du, Zhangye Wang, Shuguang Cui, **Xiaoguang Han#**, Deep Fashion3D: A Dataset and Benchmark for 3D Garment Reconstruction from Single Images. ECCV 2020 (**Oral, 2%**)
- ECCV 2020** Lingteng Qiu, Xuanye Zhang, Yanran Li, Guanbin Li, Xiaojun Wu, Zixiang Xiong, **Xiaoguang Han #**, Shuguang Cui, Peeking into occluded joints: A novel framework for crowd pose estimation. ECCV 2020
- CVPR 2020** Yinyu Nie, **Xiaoguang Han #**, Shihui Guo, Yujian Zheng, Jian Chang, Jianjun Zhang. Total3DUnderstanding: Joint Layout, Object Pose and Mesh Reconstruction for Indoor Scenes from a Single Image. IEEE Conference on Computer Vision and Pattern Recognition. (**Oral, Paper Award Nominees, ~0.4%**)
- CVPR 2020** Yiqun Lin, Zizheng Yan, Haibin Huang, Dong Du, Ligang Liu, Shuguang Cui, **Xiaoguang Han #**. FPConv: Learning Local Flattening for Point Convolution. IEEE Conference on Computer Vision and Pattern Recognition.
- ACM MM 2020** Xiaojun Jia, Xingxing Wei, Xiaochun Cao, **Xiaoguang Han**, Adv-watermark: A Novel Watermark Perturbation for Adversarial Examples
- ACM MM 2020** Xianggang Yu, Haolin Liu, **Xiaoguang Han #**, Zhen Li, Zixiang Xiong, Shuguang Cui, JAFPro: Joint Appearance Fusion and Propagation for Human Video Motion Transfer from Multiple Reference Images
- ACM MM 2020** Jie Wu, Guanbin Li, **Xiaoguang Han**, Liang Lin, Reinforcement Learning for Weakly Supervised Temporal Grounding of Natural Language in Untrimmed Videos.

- IEEE TVCG 2020** Dong Du, **Xiaoguang Han#**, Hongbo Fu, Feiyang Wu, Yizhou Yu, Shuguang Cui, Ligang Liu, SAniHead: Sketching Animal-like 3D Character Heads Using a View-surface Collaborative Mesh Generative Network
- IEEE TIP 2020** Chaowei Fang, Guanbin Li, **Xiaoguang Han**, Yizhou Yu. Self-Enhanced Convolutional Network for Facial Video Hallucination. IEEE Transactions on Image Processing.
- WACV 2020** Jinmiao Cai, Nianjuan Jiang, **Xiaoguang Han**, Kui Jia, Jiangbo Lv, JOLO-GCN: Mining Joint-Centered Light-Weight Information for Skeleton-Based Action Recognition
- Pacific Graphics 2020** Dong Du, Heming Zhu, Yinyu Nie, **Xiaoguang Han#**, Shuguang Cui, Yizhou Yu, Ligang Liu, Learning Part Generation and Assembly for Sketching Man-made Objects
- Pacific Graphics 2020** Yao Li, Xianggang Yu, **Xiaoguang Han#**, Nianjuan Jiang, Kui Jia, Jiangbo Lv, A Deep Learning Based Interactive Sketching System for Fashion Images Design
- ICME 2020** Xiangyu Zhu, **Xiaoguang Han #**, Wei Zhang, Jian Zhao, Ligang Liu. Learning intrinsic decomposition of complex-textured fashion images. IEEE International Conference on Multimedia & Expo.
- 3DV 2020** Dong Du, Zhiyi Zhang, **Xiaoguang Han#**, Shuguang Cui, Ligang Liu, VIPNet: a fast and accurate single-view Volumetric reconstruction by learning sparse Implicit Point guidance
- ICCV 2019** Kun Zhou, **Xiaoguang Han**, Nianjuan Jiang, Kui Jia, Jiangbo Lv. HEMlets Pose: Learning Part-Centric Heatmap Triplets for Accurate 3D Human Pose Estimation. IEEE International Conference on Computer Vision.
- ICCV 2019** Junyi Pan, **Xiaoguang Han**, Weikai Chen, Jiapeng Tang, Kui Jia. Deep Mesh Reconstruction from Single RGB Images via Topology Modification Networks. IEEE International Conference on Computer Vision.
- CVPR 2019** **Xiaoguang Han**, Zhaoxuan Zhang, Dong Du, Mingdai Yang, Jingming Yu, Pan Pan, Xin Yang, Ligang Liu, Zixiang Xiong, Shuguang Cui. Deep Reinforcement Learning of Volume-guided Progressive View Inpainting for 3D Point Scene Completion from a Single Depth Image. IEEE Conference on Computer Vision and Pattern Recognition. **(Oral, ~5.6%)**
- CVPR 2019** Jiapeng Tang*, **Xiaoguang Han***, Junyi Pan, Kui Jia, Xin Tong. A Skeleton-bridged Deep Learning Approach for Generating Meshes of Complex Topologies from Single RGB Images. IEEE Conference on Computer Vision and Pattern Recognition. **(Oral, Best Paper Finalist, ~ 0.8%)**
- AAAI 2019** Chuan Wang, Haibin Huang, **Xiaoguang Han #**, Jue Wang. Video Inpainting by Jointly Learning Temporal Structure and Spatial Details. The 33rd AAAI Conference on Artificial Intelligence.
- Pacific Graphics 2019** Haonan Qiu, Chuan Wang, Hang Zhu, Xiangyu Zhu, Jinjin Gu, **Xiaoguang Han#**. Two-phase Hair Image Synthesis by Self-Enhancing Generative Model. Journal of Computer Graphics Forum.
- IEEE ISBI 2019** Zizheng Yan, **Xiaoguang Han #**, Changmiao Wang, Yuda Qiu, Zixiang Xiong, Shuguang Cui. Learning mutually local-global u-nets for high-resolution retinal lesion segmentation in fundus images. IEEE International Symposium on Biomedical Imaging.
- CGI 2019** Yanlong Tang, **Xiaoguang Han #**, Yue Li, Ruofeng Tong. Expressive facial style transfer for personalized memes mimic. Proceeding of CGI 2019. (The visual computer)
- TVCG 2018** **Xiaoguang Han**, Kangcheng Hou, Dong Du, Yuda Qiu, Shuguang Cui, Kun Zhou, Yizhou Yu. CaricatureShop: Personalized and Photorealistic Caricature Sketching. IEEE Transactions on Visualization and Computer Graphics.
- ICCV 2017** **Xiaoguang Han***, Zhen Li*, Haibin Huang, Evangelos Kalogerakis, Yizhou Yu. High Resolution Shape Completion Using Deep Neural Networks for Global Structure and Local Geometry Inference. IEEE International Conference on Computer Vision. **(Spotlight Oral, ~5%)**
- SIGGRAPH 2017** **Xiaoguang Han**, Chang Gao, Yizhou Yu. DeepSketch2Face: A Deep Learning Based Sketching System for 3D Face and Caricature Modeling. ACM Transaction on Graphics (TOG), Proceedings of ACM SIGGRAPH 2017. **Part of the Technical Papers Video**

Trailer, a featured talk invited by NVIDIA.

**Graphical Models
2017**

Xiaoguang Han, Hongchuan Yu, Yizhou Yu, Jianjun Zhang, A fast propagation scheme for approximate geodesic paths, CVM 2017, Journal of Graphical Models

SIGGRAPH 2016

Yipeng Qin*, *Xiaoguang Han**, Hongchuan Yu, Yizhou Yu, Jianjun Zhang. Fast and Exact Discrete Geodesic Computation Based on Triangle-Oriented Wavefront Propagation. ACM Transaction on Graphics (TOG), Proceedings of ACM SIGGRAPH 2016.

IEEE CG&A 2016

Xiaoguang Han, Kenneth K.Y. Wong, Yizhou Yu. 3D Human Model Reconstruction from Sparse Uncalibrated Views. IEEE Computer Graphics and Applications. **One of the Notable Articles of the 21st Annual Best of Computing.**

SIGGRAPH 2015

Sai Bi, *Xiaoguang Han*, Yizhou Yu. An L1 Image Transform for Edge-Preserving Smoothing and Scene-Level Intrinsic Decomposition. ACM Transaction on Graphics (TOG), Proceedings of ACM SIGGRAPH 2015.

**SIGGRAPH ASIA
2013**

Hongbo Fu, *Xiaoguang Han*, Quoc Huy Phan. Data-driven Suggestions for Portrait Posing. SIGGRAPH ASIA 2013 Technical Briefs and Emerging Technologies. **Best Demo Award. One of the four program highlights.**

IEEE CG&A 2013

Xiaoguang Han, Hongbo Fu, Hanlin Zheng, Ligang Liu, Jue Wang. A Video-based Interface for Hand-Driven Stop Motion Animation Production. IEEE Computer Graphics and Applications.

SIGGRAPH 2010

Shizhe Zhou, Hongbo Fu, Ligang Liu, Daniel Cohen-Or, *Xiaoguang Han*. Parametric reshaping of human bodies in images. ACM Transaction on Graphics (TOG), special issue: Proceedings of ACM SIGGRAPH 2010. **One of the six highlights among all SIGGRAPH 2010 papers.**

Selected Research Grants (A total of 5,396,000 RMB hosted by me)

- ◇ National Natural Science Youth - Intelligent Sketch 3D Character Modeling Based on Deep Learning
2020-2022 (PI):300,000 RMB
- ◇ Shenzhen General Project - Research on Virtual Object Insertion Technology in Single-view Indoor Scene
2020-2022 (PI): 400,000 RMB
- ◇ Shenzhen Meteorological Bureau - Intelligent analysis and mining platform for meteorological disaster information in Shenzhen Bay Area
2019-2020 (PI): 3,450,000 RMB (**completed**)
- ◇ National Natural Science Key Project - Research on intelligent diagnosis of lymph node metastasis of bladder cancer based on CT images and urine characteristic spectrum
2020-2024 (PI @ CUHKSZ): 586,000 out of 2,950,000 RMB
- ◇ Alibaba AIR Project
2018-2019 (PI): 660,000 RMB (**completed**)

Awards

Best Dataset Award

Deep Fashion3D by Chinagraph 2020

Champion

2018 IEEE ICDM Global Tianchi Weather Forecast Competition

Best Demo Award

“Data-driven Suggestions for Portrait Posing” Siggraph Asia 2013 Technical Briefs and Emerging Technologies

Professional Talks

- 2019.11 Points vs. Voxels: Which 3D representation is better for deepnet-based shape decoder, PRCV Special invited speaker of 3D Vision Frontier Forum.
- 2019.08 Which 3D Representation is Best for Deepnet-based Reconstruction? Special invited speaker of YOCSEF Greater Bay Area IT Innovation Forum.
- 2017.08 "DeepSketch2Face: A Deep Learning Based Sketching System for 3D Face and Caricature Modeling", Invited by NVIDIA, L.A., US.
- 2017.07 The application of deep learning in 3D reconstruction and modeling, Summer course of "Computer Graphics", University of Science and Technology of China.

Professional Services

- ◇ Member of the Standing Committee, GAMES: Graphics And Mixed Environment Seminar, the largest graphics organization in mainland China
- ◇ Program Co-chairs: DEA 2018 (Dalian)
- ◇ Co-Organizer: The 1st workshop on geometric learning at PRCV 2018(Guang Zhou)
- ◇ Program committee: SMI 2020, CVM 2019, PG 2018, CVM 2018, AAAI 2019, BMVC 2020, 3DV 2020, WACV 2021, Siggraph Asia 2019 technical brief
- ◇ Reviewer: Siggraph, Siggraph Asia, CVPR, ICCV, ECCV, ACM TOG, IEEE TVCG, IEEE TIP, IEEE TCSVT, IEEE TMM etc.

Teaching Experience

- ◇ CSC1001-2018 Summer Term: Introduction to Programming: Python, Instructor
CTE score (satisfaction with teacher): 5.21 out of 6 (average score of CUHKSZ is 5.48)
- ◇ CSC1001-2018-2019 Term 2: Introduction to Programming: Python, Instructor
CTE score (satisfaction with teacher): 5.79 out of 6 (average score of CUHKSZ is 5.55)
- ◇ CSC1001- 2019-2020 Term 2: Introduction to Programming: Python, Instructor
CTE score (satisfaction with teacher): 5.76 out of 6 (average score of CUHKSZ is 5.67)
- ◇ COMP3271- 2016-2017: Computer Graphics, Teaching Assistant

Reference

- Prof. Yizhou Yu** IEEE Fellow, ACM distinguished member, Full Professor at The University of Hong Kong, Ph.D. supervisor, yizhouy@acm.org
- Prof. Shuguang Cui** IEEE Fellow, Presidential Chair Professor, Acting Dean, School of Science and Engineering, Chinese University of Hong Kong, Shenzhen, shuguangcui@cuhk.edu.cn
- Prof. Zixiang Xiong** IEEE Fellow, Professor and Associate Dept Head, Department of Electrical and Computer Engineering, Texas A&M University, close collaborator, zx@ece.tamu.edu
- Prof. Hongbo Fu** Full Professor at City University of Hong Kong, academic advisor in 2011 - 2013, hongbofu@cityu.edu.hk
- Prof. Ligang Liu** Full Professor at University of Science and Technology of China, master advisor in 2009-2011, lgliu@ustc.edu.cn