

Qingan Yan

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Research Interests

My interests primarily focus on the field of 3D computer vision and graphics. In particular, I tackle the challenges in *structure from motion*, *multi-view stereo*, *RGB-D fusion*, *depth estimation*, *image synthesis* and *visual correspondence*. I am also interested in 3D deep learning, such as *3D scene perception*, *guided shape recovery* and *unstructured data representation*. In JD, I work on *fashion-related* applications, mainly involved in *virtual human shaping* and *clothing fitting*.

Work Experience

- **JD.com American**, Silicon Valley Research Center, California, USA Nov 2017 – current
Position: **Research Scientist**
Duty: *Design efficient algorithms for JD's AR products using 3D computer vision and computer graphics technologies and incorporate deep learning and geometry processing algorithms for human-garment registration and deformation.*
- **Wuhan University**, Wuhan, China Jul 2015 – Jul 2017
Position: **Research Assistant**
Duty: *Conducted research on image-based modeling and image-based rendering problems and developed effective algorithms for SLAM and texture synthesis.*
- **Wuhan EONES technology Co.,Ltd**, Wuhan, China Jul 2008 – Apr 2009
Position: **Software Engineer**
Duty: *Develop logistics management systems and software.*

Education

- Ph.D. in Computer Science, **Wuhan University** Sep 2012 – Jul 2017
Advisor: Prof. Chunxia Xiao
Areas of Focus: *Computer Vision, Computer Graphics*
- M.S. in Computer Science, **Southwest University of Science and Technology** Sep 2009 – Jun 2012
Advisor: Prof. Yadong Wu
Areas of Focus: *Computer Vision, Image Processing, Human-Computer Interaction*
- B.E. in Computer Science, **Hubei University for Nationalities** Sep 2004 – Jun 2008
Advisor of Thesis: Prof. Kunwu Xie

Selected Publications

- Mengqiang Wei, **Qingan Yan**, Fei Luo, Chengfang Song, Chunxia Xiao. *Joint Bilateral Propagation Up-sampling for Unstructured Multi-view Stereo*. **The Visual Computer (TVC)**, 2019, 35(6-8): 797-809. (**Proceedings of Computer Graphics International 2019**)
- Ling Zhang, **Qingan Yan**, Yao Zhu, Xiaolong Zhang, Chunxia Xiao. *Effective Shadow Removal via Multi-scale Image Decomposition*. **The Visual Computer (TVC)**, 2019, 35(6-8): 1091-1104. (**Proceedings of Computer Graphics International 2019**)

- Yanping Fu, **Qingan Yan**, Long Yang, Jie Liao, Chunxia Xiao. *Texture Mapping for 3D Reconstruction with RGB-D Sensor*. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, Salt Lake City, USA, 2018: 4645-4653.
- Long Yang, **Qingan Yan**, Yanping Fu, Chunxia Xiao. *Surface Reconstruction via Fusing Sparse-Sequence of Depth Images*. **IEEE Transactions on Visualization and Computer Graphics (TVCG)**, 2018, 24(2): 1190-1203.
- **Qingan Yan**, Long Yang, Ling Zhang, Chunxia Xiao. *Distinguishing the Indistinguishable: Exploring Structural Ambiguities via Geodesic Context*. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, Honolulu, USA, 2017: 3836-3844. **(Spotlight Oral)**
- Ling Zhang, **Qingan Yan**, Zheng Liu, Hua Zou, Chunxia Xiao. *Illumination Decomposition for Photograph with Multiple Light Sources*. **IEEE Transactions on Image Processing (TIP)**, 2017, 26(9): 4114-4127.
- Long Yang, **Qingan Yan**, Chunxia Xiao. *Shape-Controllable Geometry Completion for Point Cloud Models*. **The Visual Computer (TVC)**, 2017, 33(3): 385-398.
- **Qingan Yan**, Long Yang, Chao Liang, Huajun Liu, Ruimin Hu, Chunxia Xiao. *Geometrically Based Linear Iterative Clustering for Quantitative Feature Correspondence*. **Computer Graphics Forum (CGF)**, 2016, 35(7): 1-10. **(Proceedings of Pacific Graphics 2016)**
- **Qingan Yan**, Zhan Xu, Chunxia Xiao. *Fast Feature-Oriented Visual Connection for Large Image Collections*. **Computer Graphics Forum (CGF)**, 2014, 33(7): 339-348. **(Proceedings of Pacific Graphics 2014)**

Patents

- Chunxia Xiao, **Qingan Yan**. *Pixel-level Point Cloud Densification Method for Geometric Clue Perception in Three-dimensional Scene Reconstruction*. **CN107610219A**, pending, January/19/2018.
- Yadong Wu, **Qingan Yan**, Zhiqin Liu. *Optical Multi-touch Contact Detection Based on Visual Attention Model*. **CN102855025B**, granted, June/17/2015.

Selected Projects (during graduate)

- **Multi-modal Sensing Based Outdoor Structures Reconstruction and Editing** Jan 2016 – Jul 2017
Description: Develop innovative approaches for modeling outdoor architectural structures combining multi-modal sensor data, such as Internet imagery, aerial photography and depth cameras. We also explore geometric deep learning methods to recover and understand the style of different architectures.
- **Crowdsourced 3D Streetscape Reconstruction and Augmentation** Sep 2012 – Dec 2016
Description: Built an unstructured imagery reconstruction framework that addresses several relevant and challenging problems existing in recent structure from motion modeling techniques, such as the matching of image collections, desification of feature correspondences and disambiguation of duplicate scenes.
- **Vision Based Finger-touch Interaction** Sep 2010 – Jun 2012
Description: Developed a vision based multi-touch system which requires lasers to be the light source and utilizes a camera to detect bright touching points. We also designed a remote finger-control system that combines Kinect and low-level vision technologies.
- **Digital Image Super-resolution** Sep 2009 – Sep 2010
Description: Drawing upon redundant examples within one given image pyramid, we conducted a data-driven method to up-sample this image and optimize its efficiency for television chip usage.

Honors and Awards

- The Second Class Graduate Academic Innovation Award of Wuhan University, 2017.
- Travel Grant Award from CVPR Doctoral Consortium, 2017.
- Excellent Graduate Award of Southwest University of Science and Technology, 2012.
- The First Class Scholarship of Jiangsu Yangshan, 2011.
- Outstanding Student Award of Southwest University of Science and Technology, 2010-2011.
- The Second Class Outstanding Undergraduate Thesis Award of Hubei Province, 2008.
- Excellent Graduate Award of Hubei University for Nationalities, 2008.

Invited/Contributed Talks

- *“Distinguishing the Indistinguishable: Exploring Structural Ambiguities via Geodesic Context”*
July 2017, CVPR spotlight presentation, Honolulu, United States.
- *“Geometrically Based Linear Iterative Clustering for Quantitative Feature Correspondence”*
October 2016, Pacific Graphics oral presentation, Okinawa, Japan.
- *“Fast Feature-Oriented Visual Connection for Large Image Collections”*
October 2014, Pacific Graphics oral presentation, Seoul, South Korea.

Professional Activities

Journal Reviewer:	IEEE Transactions on Image Processing (TIP) IEEE Transactions on Multimedia (TMM) IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) IEEE Transactions on Cybernetics (TCYB) Journal of Applied Remote Sensing (JARS) Journal of Electronic Imaging (JEL) Concurrency and Computation: Practice and Experience (CPE)
Conference Reviewer:	CVPR 2019, ICCV 2019
Conference Staff:	Chinagraph 2014, CAD/CG 2014

Technical Skills

Programming Languages:	C/C++, Python, Matlab
Development Libraries:	OpenCV, libigl, PCL, OpenGL, Tensorflow, QT, unity, D3.js
Other Tools:	L ^A T _E X, Ubuntu, Git, Kinect, Orbbec