Qingan Yan

Address	Room B501, School of Computer,	**Mobile Phone**	(+86) 139-7151-3863
	Wuhan University, China, 430072	**Email**	yanqingan@whu.edu.cn
Homepage	https://yanqingan.github.io	**Lab Website**	http://graphvision.whu.edu.cn/

Research Interests

My research interests lie in the field of *computer vision and graphics*. In particular, I tackle the challenges in: 3D reconstruction, structure from motion, matching, multi-view geometry and deep learning in scene and shape analysis.

Education

Sep 2012 - Jun 2017	School of Computer, **Wuhan University**, China
	Ph.D. in Computer Science
	Advisor: Prof. *Chunxia Xiao*
	Research Field: Computer Vision and Graphics
Sep 2009 - Jun 2012	School of Computer, **Southwest University of Science and Technology**, China
	M.S. in Computer Science
	Advisor: Prof. *Yadong Wu*
	Research Field: Human-Computer Interaction and Virtual Reality
Sep 2004 - Jun 2008	School of Information Engineering, **Hubei University for Nationalities**, China
	B.E. in Computer Science

Publications

- **Qingan Yan**, Long Yang, Chunxia Xiao. *Distinguishing the indistinguishable: exploring structural ambiguities via geodesic context.* **IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017. (Spotlight)**

  Description: Instead of analyzing explicit background context, we propose a novel algorithm for SfM disambiguation that explores the global topology as encoded in photo collections. An important adaptation of this work is to approximate the available imagery using a manifold of viewpoints. We reason that, while ambiguous images appear deceptively similar in texture, they are actually located far apart on geodesics.

- **Qingan Yan**, Long Yang, Chao Liang, Huajun Liu, Ruimin Hu and 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)**

  Description: A general deficiency to image-based modeling methods is the sparseness of output point clouds. This can be mainly attributed to the sparseness of feature matches. To overcome this problem, we provide a quantitative criteria for matching determination in order to recover more accurate and denser correspondences in unmatchable regions for SfM application.

- **Qingan Yan**, Zhan Xu and 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)**

  Description: Image matching in large-scale datasets is very time-consuming. We propose a feature-oriented method for this problem. That means, instead of querying a number of similar neighbors for each image, we find a subset of related candidates for each feature to match. This can further reduce the comparison redundancy within overlapping images.

- 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). (To appear in 2017)**

Description: We show that the input images of depth camera used for 3D modeling can be significantly reduced. Many scanned frames are redundant and noisy. Thus eliminating them can improve both the efficiency and accuracy of 3D modeling.

- Long Yang, **Qingan Yan** and Chunxia Xiao. *Shape-controllable geometry completion for point cloud models*. **The Visual Computer (TVC), 2017, 33(3): 385-398.**

  Description: We present a geometry completion algorithm for point cloud models, which is capable of filling holes on either smooth models or surfaces with sharp features, such as the sphere or the nose of human beings.

- Yadong Wu **Qingan Yan**, Jie Fu, Hongli Deng and Lili Song. *Vision based multi-touch system used in visualization*. **IEEE Pacific Visualization Symposium (PacificVis), 2011. (Poster)**

  Description: We build a vision-based multi-touch system, which can be used for exhibition and visualization. It requires lasers to be the light source and utilizes a camera to detect bright touching points. For more information, please view my video HERE.

Patents

- Yadong Wu, **Qingan Yan**, Zhiqin Liu. *Optical multi-touch contact detection based on visual attention model (in Chinese)*. **Patent Number: CN102855025B, granted, Jun.17.2015**.

Experience

Jul 2016 - Jul 2016	CIS Academic Summer Session, Wuhan, China *Teaching Assistant, Computer Graphics course* **Teacher:** Prof. *Brian A. Barsky*, UC Berkeley, US.
Jul 2014 - Oct 2014	Chinagraph 2014 and CAD&CG 2014, Wuhan University, China *Student Volunteer* **Duty**: submission notification and conference registration.
Jul 2008 - Apr 2009	Wuhan EONES technology Co.,Ltd, Wuhan, China *Software Developer* **Techniques:** C/C++, Java, Linux, PostgreSQL.

Honors and Awards

- The First Class Scholarship of Jiangsu Yangshan, 2011.
- Outstanding Student of Southwest University of Science and Technology, 2011.
- Outstanding Student of Southwest University of Science and Technology, 2010.
- The Second Class Award of Outstanding Undergraduate Thesis of Hubei Province, 2008.
- Award of Excellent Graduate of Hubei University for Nationalities, 2008.

Presentations

- *Oral Presentation.* Geometrically based linear iterative clustering for quantitative feature correspondence. Pacific Graphics 2016, Oct.11.2016, Okinawa.

- *Oral Presentation.* Fast feature-oriented visual connection for large image collections. Pacific Graphics 2014, Oct.10.2014, Seoul.

- *Poster Presentation.* Multi-touch system used in visualization. PacificVis 2011, Mar.2.2011, Hong Kong.

Technical Skills

Programming Languages:	C/C++, Matlab, Python, Java
Development Libraries:	OpenGL, OpenCV, QT, OpenMPI, Caffe, PCL, CUDA, D3.js
Other Tools:	Vim, Git, LaTeX, Ubuntu