# **Tianqiang Liu**

## Personal

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## Education

JULY 2015	Ph.D. in Computer Science, Princeton University.
JUNE 2012	Master of Arts in Computer Science, Princeton University. GPA: 4.0/4.0
JULY 2010	Bachelor in Computer Science, Tsinghua University, Beijing, China. GPA: 92.3/100, Rank: 3/137

## Work and Research Experience

#### Software Engineer at Google.

Project: Street View camera pose estimation. Project: Street View data ingest.

#### Intern at Adobe Research.

Project: Style Compatibility For 3D Furniture Models.

- Developed an algorithm to learn a compatibility metric for 3D shape styles.
- Designed novel interactive scene creation tools that are enabled by the compatibility metric.
- Published in ACM Transactions on Graphics (Proc. SIGGRAPH 2015).

#### Intern at Adobe Research.

Project: Composition-Aware Scene Optimization for Product Images.

- Designed a tool that facilitates the creation of product images by automatically refining scene layouts.
- Published in Computer Graphics Forum (Proc. Eurographics 2015).

#### Research Assistant at Princeton University

Project: Creating Consistent Scene Graphs Using a Probabilistic Grammar. APR 2013 - JUN 2014

- Developed an algorithm that analyzes 3D scenes by parsing with a grammar learned from examples.
- Our algorithm outperforms previous methods for automatic scene segmentation and annotation.
- Published in ACM Transactions on Graphics (Proc. SIGGRAPH Asia 2014).

Project: Finding Surface Correspondences Using Symmetry Axis Curves. SEP 2010 - APR 2012

- Developed an algorithm that finds correspondences between 3D surfaces using symmetry.
- Our algorithm outperforms previous methods in both efficiency and robustness.
- Published in Computer Graphics Forum (Proc. Symposium on Geometry Processing 2012).

Undergraduate Research Assistant at Tsinghua University	Beijing, China
Project: Video Enhancement Using Fast Bilateral Filtering.	Feb 2010 - Мау 2010

• Developed a method to improve both accuracy and speed for intra- and inter-frame video denoising.

Mountain View, CA APR 2018 - NOW AUG 2015 - APR 2018

San Francisco, CA JUN 2014 - SEP 2014

Cambridge, MA

Princeton, NJ

JUN 2012 - AUG 2012

Project: Efficient Affinity-based Edit Propagation Using K-D tree.

• Developed an algorithm that leverages K-D tree in high-dimensional affinity space for approximately solving the edit propagation problem.

## Skills

- Computer vision, Computational geometry, Algorithm design.
- C++, Java, Python.

## **Publications**

- [8] Style Compatibility For 3D Furniture Models Tianqiang Liu, Aaron Hertzmann, Wilmot Li, Thomas Funkhouser ACM Transactions on Graphics (Proc. SIGGRAPH), 2015
- [7] **Composition-Aware Scene Optimization for Product Images** Tianqiang Liu, Jim McCann, Wilmot Li, Thomas Funkhouser Computer Graphics Forum (Proc. Eurographics), 2015
- [6] Analyzing, Optimizing and Synthesizing Scenes by Reasoning About Relationships Between Objects Tianqiang Liu
  PhD thesis, Princeton University, 2015
- [5] Creating Consistent Scene Graphs Using a Probabilistic Grammar Tianqiang Liu, Siddhartha Chaudhuri, Vladimir Kim, Qi-Xing Huang, Niloy Mitra, Thomas Funkhouser ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2014
- [4] **Composition-Aware Scene Optimization for Product Images** Tianqiang Liu, Jim McCann, Wilmot Li, Thomas Funkhouser Princeton University Technical Report, TR-970-14, 2014
- [3] **Finding Surface Correspondences Using Symmetry Axis Curves** Tianqiang Liu, Vladimir Kim, Thomas Funkhouser Computer Graphics Forum (Proc. Eurographics Symposium on Geometry Processing), 2012
- Video enhancement based on fast bilateral filtering Tianqiang Liu
  Bachelor thesis, Tsinghua University, 2010
- [1] Efficient Affinity-based Edit Propagation Using K-D Tree Kun Xu, Yong Li, Tao Ju, Shi-Min Hu, Tianqiang Liu ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2009

## **Academic Services**

Program Committee Member:	Pacific Graphics 2015, 2016
Reviewer:	SIGGRAPH 2015, SIGGRAPH Asia 2015, SGP 2015, CAD/Graphics 2013,
	TVCG, Computer Graphics Forum, IJCV, Computers & Graphics

### Honors

- 2009 First-Class National Scholarship of China.
- 2008 Goldman Sachs Global Leaders Scholarship (26 winners in China / 135 winners in the world).
- 2007 First-Class National Scholarship of China.
- 2005 Silver Medal in Chinese Physics Olympiad (29th overall).