

# Jiajun Lu

## Basic Information

University of Illinois at Urbana-Champaign

Homepage: <http://www.jiajunlu.com>

Advisor: David Forsyth (Fulton Watson Copp Chair)

Research Area: Vision, Graphics, Interactions

## Contact

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## Education Background

- *Visiting Researcher* of Computer Science, **Stanford University** 2017
- *PhD Candidate* of Computer Science, **UIUC** 2013 - 2017  
Graduate GPA: 3.9/4.0
- *Bachelor* of Computer Science, **Zhejiang University** (Top 3 Universities in China) 2009 - 2013  
Undergraduate MAJOR GPA: 3.98/4.0 RANK: 1 / 180

## Publications

- Adversarial Examples that Fool Detectors. **Jiajun Lu**, Hussein Sibai, Evan Fabry. Submitted to CVPR 2018.
- Standard detectors aren't (currently) fooled by physical adversarial stop signs. **Jiajun Lu**, Hussein Sibai, Evan Fabry, David Forsyth. Arxiv.
- SafetyNet: Detecting and Rejecting Adversarial Examples Robustly. **Jiajun Lu**, Theerasit Issaranon, David Forsyth. ICCV 2017.
- CDVAE: Co-embedding Deep Variational Auto Encoder for Conditional Variational Generation. **Jiajun Lu**, Aditya Deshpande, David Forsyth. Arxiv 2017.
- NO Need to Worry about Adversarial Examples in Object Detection in Autonomous Vehicles. **Jiajun Lu\***, Hussein Sibai\*, Evan Fabry, David Forsyth. CVPR 2017, Oral Workshop, **FAMOUS PAPER**.
- Learning Diverse Image Colorization. Aditya Deshpande, **Jiajun Lu**, Mao-Chuang Yeh, David Forsyth. CVPR 2017.
- Hybrid HFR Depth: Fusing Depth and Color Cameras for High Speed, Low Latency Depth Camera Interactions. **Jiajun Lu**, Hrvoje Benko, Andy Wilson. SIGCHI 2017, **BEST PAPER NOMINEE**.
- A Visual Representation for Editing Face Images. **Jiajun Lu**, Kalyan Sunkavalli, Nathan Carr, Sunil Hadap, David Forsyth. Arxiv, To TPAMI.
- Sparse Depth Super Resolution. **Jiajun Lu**, David Forsyth. CVPR 2015.
- Splitter: Mining Fine-Grained Sequential Patterns in Semantic Trajectories. Chao Zhang, Jiawei Han, Lidan Shou, **Jiajun Lu**, Thomas La Porta. Very Large Data Bases 2014 (VLDB).
- Semi-supervised Mesh Segmentation and Labeling. **Jiajun Lv**, Xinlei Chen, Jin Huang, Hujun Bao. **Computer Graphics Forum**, 31 (7), 2012. Pacific Graphics 2012.
- Undergraduate Thesis "Component Morphing Based Shape Synthesis".

## Research Projects

**Stanford University:** Prof. Maneesh Agrawala (Forest Baskett Professor)

- Video Search and Synthesize 2017/05-Present  
Converting comics into cartoons using deep learning methods, which mainly include visual ranking, cross domain embedding and so on.

**Google Project Soli:** <https://atap.google.com/soli/>

- PhD Funding Project 2014/08-Present  
Cooperated secret project with Google, who gives 1.5 million USD to fund my PhD. Working on machine learning algorithms for gesture recognition, and turning Soli into general depth sensor.

**UIUC:** Prof. David Forsyth (Fulton Watson Copp Chair)

- Security of Deep Neural Networks 2017/01-Present  
Investigate the reasons that deep neural networks work, and design secure neural networks to adversarial examples and other potential attacks, have applications like face recognition and autonomous vehicles. *The paper about the possibility to build imperceptible physical adversarial stop sign in a moving camera system caused a big discussion in the vision and graphics community.*
  - Deep Generative Models 2016/08-Present  
Design deep learning algorithms for conditional variational generation tasks, such as image reshading, image resaturation, image recolor, and motion prediction.
  - Face Image Editing 2015/06-2016/06  
Cooperated project with Adobe Research. Working on face editing framework, such as makeup transfer, face relighting and face detail editing.
  - Depth Super Resolution 2013/12-2015/06  
Improve the spatial depth image quality from depth cameras.
- UIUC: Prof. John C. Hart**
- Insects Stereo Reconstruction 2013/08-2014/08  
Reconstructing 3D models of various insects using photos from multiple angles.
- Microsoft Research Redmond: Andy Wilson (Principal Researcher & Manager)**
- Hybrid HFR Depth 2016/05-2016/08  
Fusing Depth and Color Cameras for High Speed, Low Latency Depth Camera Interactions, ACM CHI Best Paper Nominee.
- Adobe Research: Nathan Carr (Principal Researcher & Manager), Kalyan Sunkavalli, Sunil Hadap**
- Human Face Reconstruction 2015/05-2015/08  
Reconstruct 3D human face model from a single image, widely used in Adobe products and their other research projects.
- XHey Technology Beijing: Series A Social Network Company**
- Co-founder and CTO 2015/01-2015/07  
Built the engineering team of the company from ground, and directed the development of the first product Double Date. Help everyone in the engineering team to work to their best, and ensures the fast growth of the company.
- Nokia Here Research: Matei Stroila (Research Manager)**
- 3D Building Reconstruction 2014/05-2014/08  
3D Building Reconstruction from Radar Data from Street Vehicle
- Microsoft Research Asia: Qinwei Lin (Researcher) and Jianguang Lou (Senior Researcher)**
- Inference Graph Based Performance Diagnosis 2012/09-2013/04  
Analysis the Microsoft online service log information using data mining methods and inference graph. Aim to find the root cause of system delay.
- Computer Science, UCLA: Prof. Wesley W. Chu (Distinguished Professor)**
- PhenoWikiPlus 2012/07-2012/09  
Join the CoBase Laboratory of **UCLA** Computer Science Department and focus on the development of PhenoWikiPlus system (<http://phenowiki.cs.ucla.edu>), which is designed for building the neuroscience knowledge base and search engine.
- CAD&CG, Zhejiang Univ: Prof. Evangelis Kalogerakis (Umass, Amherst) and Prof. Jin Huang**
- Component Morphing Based Shape Synthesis 2012/08-2013/08  
My undergraduate thesis project. Combine probabilistic graphics model with component morphing to create reasonable and abundant shapes.
- CAD&CG, Zhejiang Univ: Prof. Hujun Bao (Laboratory Director) and Prof. Jin Huang**
- Shape Analysis 2011/08-2013/08

Work on point cloud reconstruction and mesh segmentation. Improving point cloud reconstruction quality by introducing a novel cost, and introducing semi-supervised learning to graphics area, especially mesh segmentation.

### Selected Honors and Awards

#### Scholarships & Honors:

- **Qualcomm Innovation Fellowship** finalists, Qualcomm Inc. 2017/05
- **Saburo Muroga Endowed Fellowship**, UIUC 2013/09
- **Chu Kechen Scholarship** (12/20000), Highest Honor in Zhejiang University, Included in School History 2012/10
- **Cross-disciplinary Scholars in Science and Technology** (Only 2 Computer Science Students Selected from 10 Best Universities in China), UCLA 2012/09
- **National Scholarship** in China (Top 1.5%) 2010/10 & 2011/10
- **He Zhijun Scholarship** (1/370+, Highest Honor in CS of Zhejiang University) 2012/04

#### Awards & Prizes:

- Meritorious Winner, America Mathematical Contest in Modeling 2012/04
- Silver Medal, Asia Regional Jamborees, iGEM (International Genetic Competition) 2012/10
- 1st Prize, Zhejiang Province Higher Math Contest 2010/11
- 1st Prize, Zhejiang Province Innovation Physics Contest 2010/12

### Peer Reviewer

Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV), European Conference on Computer Vision (ECCV), ACM User Interface Software and Technology (UIST), ACM Computer-Human Interaction (SIGCHI), International Conference on Robotics and Automation (ICRA), Computer Graphics Forum (CGF)

### Technical Skills

- Programming: C++, C, C#, Python, Java, Matlab, Lua, Javascript, PHP, Android
- Deep Learning: Tensorflow, Theano, Torch, Caffe
- Language: Fluent English, Native Chinese, Beginner Korean