

# Qianqian Wang | Curriculum Vitae

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## Education

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### Cornell Tech, Cornell University

*Ph.D. candidate in Computer Science*

Advisor: Prof. Noah Snavely

New York, NY

2018 – Present

### Zhejiang University

*Bachelor of Information Engineering, GPA: 3.94/4.00*

Advisor: Prof. Xiaowei Zhou

Hangzhou, China

2014 – 2018

### University of Pennsylvania

*Research Intern*

Advisor: Prof. Kostas Daniilidis

Philadelphia, PA

07/2017 – 10/2017

## Research Interests

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- 3D Computer Vision, Computer Graphics, Machine Learning

## Publications

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- Jiaming Sun, Xi Chen, **Qianqian Wang**, Zhengqi Li, Hadar Averbuch-Elor, Xiaowei Zhou, Noah Snavely, *Neural 3D Reconstruction in the Wild*, SIGGRAPH 2022 (conference track).
- **Qianqian Wang**, Zhengqi Li, David Salesin, Noah Snavely, Brian Curless, Janne Kontkanen, *3D Moments from Near Duplicate Photos*, CVPR 2022.
- Haoyu Guo, Sida Peng, Haotong Lin, **Qianqian Wang**, Guofeng Zhang, Hujun Bao, Xiaowei Zhou, *Neural 3D Scene Reconstruction with the Manhattan-world Assumption*, CVPR 2022 (**Oral**).
- Yuan Liu, Sida Peng, Lingjie Liu, **Qianqian Wang**, Peng Wang, Christian Theobalt, Xiaowei Zhou, Wenping Wang, *Neural Rays for Occlusion-aware Image-based Rendering*. CVPR 2022.
- Sida Peng\*, Junting Dong\*, **Qianqian Wang**, Shangzhan Zhang, Qing Shuai, Hujun Bao, Xiaowei Zhou, *Animatable Neural Radiance Fields for Human Body Modeling*, ICCV 2021. (\* Equal contribution)
- **Qianqian Wang**, Zhicheng Wang, Kyle Genova, Pratul Srinivasan, Howard Zhou, Jon Barron, Ricardo Martin-Brualla, Noah Snavely, Thomas Funkhouser, *IBRNet: Learning Multi-View Image-Based Rendering*, CVPR 2021.
- Kai Zhang\*, Fujun Luan\*, **Qianqian Wang**, Kavita Bala, Noah Snavely, *Inverse Rendering with Spherical Gaussians for Physics-based Material Editing and Relighting*, CVPR 2021. (\* Equal contribution)
- Sida Peng, Yuanqing Zhang, Yinghao Xu, **Qianqian Wang**, Qing Shuai, Hujun Bao, Xiaowei Zhou, *Neural body: Implicit neural representations with structured latent codes for novel view synthesis of dynamic humans*, CVPR 2021 (**Best Paper Candidate**).
- **Qianqian Wang**, Xiaowei Zhou, Bharath Hariharan, Noah Snavely, *Learning Feature Descriptors using Camera Pose Supervision*, ECCV, 2020 (**Oral**).
- Jin Sun, Hadar Averbuch-Elor, **Qianqian Wang**, Noah Snavely, *Hidden Footprints: Learning Contextual Walkability from 3D Human Trails*, ECCV, 2020.

- o **Qianqian Wang**, Xiaowei Zhou, Kostas Daniilidis, *Multi-Image Semantic Matching by Mining Consistent Features*, CVPR, 2018.

## Research Projects

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### 3D Cinematic Moments.....

**Research Intern, Google Research** **New York, NY (remote)**  
*Mentor: Brian Curless, Janne Kontkanen* 05/2021 – 12/2021

- o developing a learning-based pipeline for simultaneous novel view synthesis and motion interpolation from sparse input images

### Learning Multi-View Image-Based Rendering.....

**Research Intern, Google Research** **New York, NY (remote)**  
*Mentor: Thomas Funkhouser, Zhicheng Wang* 06/2020 – 12/2020

- o proposed a generalizable image-based rendering method that produces continuous radiance fields on-the-fly from multiple views of novel scenes
- o demonstrated state-of-the-art performance generalizing to novel scenes; if fine-tuned per-scene, the method is competitive to NeRF

### Spherical Gaussians–based Inverse Rendering.....

**Cornell Graphics and Vision Group** **Cornell Tech, Cornell University**  
*Advisor: Prof. Noah Snavely and Prof. Kavita Bala* 03/2020 – 12/2020

- o proposed a physically-based inverse rendering pipeline that jointly estimates lighting, material properties and geometry from multi-view images
- o utilized spherical Gaussians to efficiently evaluate the rendering equation in closed form
- o demonstrated applications of material editing and relighting in a physically-intuitive way

### Learning Feature Descriptors using Camera Pose Supervision.....

**Cornell Graphics and Vision Group** **Cornell Tech, Cornell University**  
*Advisor: Prof. Noah Snavely and Prof. Bharath Hariharan* 05/2019 – 02/2020

- o proposed a novel descriptor learning framework that only requires relative camera poses to train
- o proposed a new epipolar loss and a new differentiable matching layer to enable end-to-end training
- o proposed a new coarse-to-fine architecture to boost matching accuracy and efficiency
- o demonstrated state-of-the-art performance on multiple geometry tasks

### Multi-Image Semantic Matching.....

**GRASP Laboratory** **University of Pennsylvania**  
*Advisor: Prof. Kostas Daniilidis* 07/2017 – 10/2017

- o proposed a novel approach that can select and match reliable features across multiple images
- o improved matching accuracy by enforcing geometric consistency using a low-rank constraint
- o achieved competitive performance on multi-graph matching and semantic flow benchmarks
- o demonstrated applications to object-class reconstruction and automatic landmark annotation

## Awards

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- o **Google PhD Fellowship** 01/2022

- **Meta PhD Fellowship Finalist** 01/2022
- **NVIDIA Academic Hardware Grant** 08/2021
- **TA Outstanding Award**, Cornell University 05/2019
- **First-Class Scholarship for Outstanding Students**, China 10/2017
- **Zhejiang Daily & Alibaba New Media Scholarship**, China 10/2017
- **The Samsung Scholarship** 11/2016
- **National Scholarship**, Ministry of Education of China 11/2015

## Invited Talks

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- GAMES Webinar 01/2022
- Visual Informatics Group @ University of Texas at Austin 01/2022

## Other Services

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- **Technical Paper Reviewer**
  - ACM SIGGRAPH 2022
  - Computer Vision and Pattern Recognition (CVPR) 2021, 2022
  - International Conference on Learning Representations (ICLR) 2021
  - International Conference on Computer Vision (ICCV) 2021
- **Teaching Assistant**
  - CS 5670: Introduction to Computer Vision, Cornell Tech Spring 2022
  - CS 5781: Machine Learning Engineering, Cornell Tech Fall 2021
  - CS 5670: Introduction to Computer Vision, Cornell Tech Spring 2021
  - CS 5787: Deep Learning, Cornell Tech Spring 2020
  - CS 5670: Introduction to Computer Vision, Cornell Tech Spring 2019
  - CS 4700: Artificial Intelligence, Cornell University Fall 2018

## Computer Skills

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- Python, PyTorch, TensorFlow, C/C++, MATLAB, Java, Lua, Caffe.