Zhengqi Li | Curriculum Vitae

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Education

Cornell Tech, Cornell University — **New York, NY**
Ph.D. candidate in computer science, GPA: 4.00/4.00 — *2016–2021 (expected)*
Advisor: Prof. Noah Snavely

University of Minnesota, Twin Cities — **Minneapolis, MN**
Bachelor of Computer Engineering with High Distinction, GPA: 3.99/4.00 — *2013–2016*

Research Interests

- 3D Vision, Inverse Rendering, Image-based Rendering, Computational Photography

Publications

- **Zhengqi Li**, Wenqi Xian, Abe Davis, Noah Snavely. Crowdsampling the Plenoptic Function. *European Conference on Computer Vision (ECCV)*, 2020 (**Oral**)
- **Zhengqi Li**, Tali Dekel, Forrester Cole, Richard Tucker, Noah Snavely, Ce Liu, William T. Freeman. MannequinChallenge: Learning the Depths of Moving People by Watching Frozen People. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*
- Wenqi Xian*, **Zhengqi Li***, Matthew Fisher, Jonathan Eisenmann, Eli Shechtman, Noah Snavely. UprightNet: Geometry-Aware Camera Orientation Estimation from Single Images. *International Conference on Computer Vision (ICCV)*, 2019 (* equal contribution)
- **Zhengqi Li**, Tali Dekel, Forrester Cole, Richard Tucker, Noah Snavely, Ce Liu, William T. Freeman. Learning the Depths of Moving People by Watching Frozen People. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019 (**Oral, Best Paper Honorable Mention**)
- **Zhengqi Li**, Noah Snavely. CGINTRINSICS: Better Intrinsic Image Decomposition through Physically-Based Rendering. *European Conference on Computer Vision (ECCV)*, 2018
- **Zhengqi Li**, Noah Snavely. Learning Intrinsic Image Decomposition from Watching the World. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018 (**Spotlight Oral**)
- **Zhengqi Li**, Noah Snavely. MegaDepth: Learning Single-View Depth Prediction from Internet Photos. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018 (Invited to be presented at Bridges to 3D Workshop, CVPR 2018)
- **Zhengqi Li**, Volkan Isler. Large Scale Image Mosaic Construction for Agricultural Applications. *IEEE Robotics and Automation Letters (RA-L)*, 2016
- **Zhengqi Li**, Volkan Isler. Large Scale Image Mosaic Construction for Agricultural Applications. *IEEE International Conference on Robotics and Automation (ICRA)*, 2016
- T. Do, L.C. Carrillo-Arce, **Zhengqi Li**, and Stergios Roumeliotis. High-speed Autonomous Quadrotor Navigation through Image Paths. *Technical Report*, *University of Minnesota, Twin Cities*, 2016

Experience

Learning Rendering and Inverse Rendering in the Wild

Cornell Graphics and Vision Group **Cornell Tech, Cornell**
Advisor: Prof. Noah Snavely *09/2016–*

- Single view depth prediction from multi-view Internet photos.
- Unsupervised learning of intrinsic images from Internet time-lapse video clips.
- Learning intrinsic images by leveraging physically-based rendering.
- Geometry-aware single image camera orientation estimation.
- Novel view synthesis from Internet photo collections.

Novel view synthesis of dynamic scenes

Research Intern, Adobe Research **Seattle & NYC**
Collaborator: Oliver Wang, Simon Niklaus *05/2020–*

- Novel view synthesis of dynamic scenes.

Learning Object Pose and Shape Reconstruction

Research Intern, Facebook Reality Lab **MPK**
Collaborator: Prof. Fernando De la Torre *05/2019–08/2019*

- Multi-view supervision from unlabeled videos for joint object poses and shape estimation.

Learning the Depths of Dynamic Scenes with Moving People

Intern, Google AI Research **Cambridge & NYC**
Mentor: Tali Dekel. Teams: Prof. William T. Freeman and Prof. Noah Snavely *05/2018–02/2019*

- Creating the MannequinChallenge dataset, a large scale RGBD dataset of people in the wild.
- Video dense depth prediction of dynamic scenes with moving camera and moving people.

Project Tango, Google

Multiple Autonomous Robotic Systems (MARS) Laboratory **UMN**
Advisor: Prof. Stergios Roumeliotis *08/2014–05/2016*

- Developed improved real-time algorithms of image processing, computer vision and numerical computing.
- Participated in building a new vision-aided inertial navigation system (VINS) of Project Tango.
- Designed a new adaptive optical flow algorithm for high-speed drone autonomous navigation.

Precision Agriculture

Robotic Sensor Networks (RSN) Laboratory **UMN**
Advisor: Prof. Volkan Isler *02/2015–09/2015*

- Proposing an image processing algorithm that automatically detects corn rows from aerial images.
- Robust large scale image mosaicking algorithm used in diverse agriculture environments.
- 3D dense reconstruction of orchards using LIDAR and camera.

Awards

- **Google PhD Fellowship**, Google 2020
- **Adobe Research Fellowship**, Adobe Research 2020
- **Best Paper Honorable Mention Award**, CVPR 2019 2019

- **TA Outstanding Award**, Cornell University 2017
- **Outstanding Undergraduate Researchers Honorable Mention Award**, Computing Research Association 2016
- **Dean's List**, College of Science and Engineering, University of Minnesota 2014-2016
- **National Scholarship of China**, Ministry of Education of China, 2012

Patent

- Volkan Isler and **Zhengqi Li**. Large scale image mosaic construction for agricultural applications. *US Patent App. 15/415,347, 2018*

Talks

- NVIDIA GPU Technology Conference (GTC), 2020
- GAMES: Graphics And Mixed Environment Seminar (GAMES), 2019

Other Services

- Technical paper reviewer
  - Computer Vision and Pattern Recognition (CVPR) 2018-2020
  - European Conference on Computer Vision (ECCV) 2018-2020
  - International Conference on Computer Vision (ICCV) 2019
  - International Conference on 3D Vision (3DV) 2018-2019
  - Asian Conference on Computer Vision (ACCV) 2018
  - British Machine Vision Conference (BMVC) 2018
  - International Journal of Computer Vision (IJCV) 2019
  - IEEE Robotics and Automation Letters (RA-L) 2019
  - International Conference on Robotics and Automation (ICRA) 2019-2020
  - International Conference on Intelligent Robots and Systems (IROS) 2020
  - IEEE Transactions on Image Processing (TIP) 2019
  - SIGGRAPH Asia 2019
  - IEEE VR 2020
- Teaching Assistant
  - CS5787: Deep Learning, Cornell Tech Spring 2019-2020
  - CS5670: Introduction to Computer Vision, Cornell University Spring 2017
  - CS4750/5750: Foundations of Robotics, Cornell University Fall 2016

Computer Skills

- Programming Languages: Python, C/C++, MATLAB, Intel SSE Assembly, ARM NEON Assembly, Java, Lua, HTML, JavaScript, PHP.
- Software & Platforms & Libraries: LaTex, GitHub, SVN, CUDA, Android Development, Torch, PyTorch, TensorFlow, MySQL/SQL, JSON/AJAX, Eigen, OpenCV, Intel TBB & MKL.