

# SHICHEN LIU

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## EDUCATION

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- University of Southern California** Sep 2018 - Present  
*Ph.D. of Computer Science* *Computer Science Department*  
· **Adviser:** Prof. Hao Li
- Tsinghua University, Beijing China** Sep 2014 - Jun 2018  
*Bachelor of Engineering* *School of Software*  
· **GPA:** 88.8/100

## RESEARCH INTERESTS

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- Bridging Computer Vision and Computer Graphics: Unsupervised 3D Reconstruction, Differentiable Rendering, Graph Deep Learning
- Transfer Learning: Domain Adaptation, Cross-Modal Learning, Semi-Supervised Learning

## PUBLICATIONS

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- **Shichen Liu**, Shunsuke Saito, Weikai Chen, Hao Li. “Learning to infer implicit surfaces without 3D supervision”. *Neural Information Processing Systems (NeurIPS)*, 2019
- **Shichen Liu**, Tianye Li, Weikai Chen, Hao Li. “Soft Rasterizer: A Differentiable Renderer for Image-based 3D Reasoning”. *The IEEE International Conference on Computer Vision (ICCV)*, 2019, **Oral presentation**
- **Shichen Liu**, Mingsheng Long, Jianmin Wang, Michael I. Jordan. “Generalized Zero-Shot Learning with Deep Calibration Network”. *Neural Information Processing Systems (NeurIPS)*, 2018
- Gao Huang\*, **Shichen Liu**\* (\* equal contribution), Laurens van der Maaten, Kilian Weinberger. “CondenseNet: An Efficient DenseNet using Learned Group Convolutions”. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018, **Spotlight presentation**
- Yue Cao, Mingsheng Long, **Shichen Liu**, Jianmin Wang. “Deep Visual-Semantic Quantization for Efficient Image Retrieval”. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017
- Yue Cao, Mingsheng Long, **Shichen Liu**, Jianmin Wang. “Collective Deep Quantization for Efficient Cross-Modal Retrieval”. *AAAI Conference on Artificial Intelligence (AAAI)*, 2017

## EXPERIENCE

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- University of Southern California** | Research Assistant Aug 2018 - Present  
*Advisor: Professor Hao Li*  
· Working on deep learning based 3D mesh reconstruction without ground-truth 3D supervision via differentiable rendering (also known as inverse graphics) based on silhouettes.
- Cornell University** | Summer Research Intern Jun 2017 - Oct 2017  
*Advisor: Professor Kilian Q. Weinberger*  
· Designed dynamic connection pruning patterns for densely connected networks and an auxiliary group-lasso regularizer to minimize the pruning risk, resulting a sparse yet dense network. Achieved higher accuracy compared to MobileNets with 50% less computation budget on ImageNet and CIFAR-10/100.
- Microsoft Asia** | Research Intern Sep 2017 - Apr 2018  
*Advisor: Jingdong Wang and Chunyan Liu*  
· Analyzed the deep feature fusion and aggregation techniques between multiple frames for video object detection.
- Tsinghua University** | Research Assistant Jan 2016 - Sep 2018  
*Advisor: Professor Mingsheng Long*  
· Proposed a selective mechanism with selective cross-entropy loss and selective adversarial loss in Domain Adaptation on semantic segmentation to prevent negative transfer and promote positive transfer.  
· In Zero-Shot Learning, models tend to predict overconfident results on seen classes. We calibrated the network output during training to alleviate the issue, which significantly improves the performance of ZSL and Generalized ZSL.
- Sogou Corporation** | Browser Developer Intern Jun 2015 - Sep 2015  
· Led a team of 4 members to implement Chinese optical character recognition algorithms based on CNNs.

## AWARDS

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- Tsinghua University Scholarship 2017
- Sensetime Scholarship 2017
- Qualcomm Scholarship 2016

- Tsinghua Technology Innovation Scholarship 2016
- Tsinghua Technology Innovation Scholarship 2015
- First Prize of National Olympiad in Information Province Competition, Beijing 2012

## SKILLS AND INTERESTS

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- Language: Native in Chinese (Mandarin), Fluent in English, Conversational Proficiency in Japanese (N2)
- Programming Language: Python, C/C++/CUDA, Matlab, Haskell, Lisp, JavaScript, Lua and L<sup>A</sup>T<sub>E</sub>X
- Deep Learning Platform: Caffe, PyTorch, Torch, TensorFlow and MXNet