HAIDONG ZHU

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EDUCATION

Ph.D. (pre-candidate), Computer Science, University of Southern California, 2019 - 2024 (expected)
B.E., Electronic Information Science and Technology, Tsinghua University, 2015 - 2019

PUBLICATIONS

Or Litany, Congyue Deng, Yueqi Duan, Haidong Zhu, Haggai Maron, Adrien Poulenard, Andrea Tagliasacchi, and Leonidas Guibas, **Equivariant Autodecoders for Neural Implicit Representation**, *In preparation.*

Haidong Zhu, Arka Sadhu, Zhaoheng Zheng, and Ram Nevatia, **Utilizing Every Image Object for Semi-supervised Phrase Grounding**, *Accepted by WACV 2021.* [Paper]

Yueqi Duan*, Haidong Zhu*, He Wang, Li Yi, Ram Nevatia, and Leonidas J. Guibas, **Curriculum DeepSDF**, *Accepted by ECCV 2020.* (equal contribution) [Paper][Code]

Chuanzi He, Haidong Zhu, Jiyang Gao, Kan Chen, and Ram Nevatia, **CPARR: Category-based Proposal Analysis for Referring Relationships**, *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), pp. 4074-4083, 2020.* [Paper]

Haidong Zhu, Jialin Shi, and Ji Wu, **Pick-and-Learn: Automatic Quality Evaluation for Noisy-Labeled Image Segmentation**, *Proceedings of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), LNCS 11769, pp. 576-584, 2019.* [Paper]

Brian Matejek, Daniel Haehn, Haidong Zhu, Donglai Wei, Toufiq Parag, and Hanspeter Pfister, **Biologically Constrained Graphs for Global Connectomics Reconstruction**, *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), pp. 2089-2098, 2019.* [Paper][Project][Code]

PROFESSIONAL ACTIVITIES

Reviewer: ICME 2020, BMVC 2020, WACV 2021

TECHNICAL SKILLS

Deep Learning Framework Tensorflow, Keras, PyTorch, Theano, Caffe
Programming Language C/C++, Python, MATLAB, Mathematica, Verilog,

RESEARCH EXPERIENCE

IRIS Computer Vision Lab, University of Southern California **Los Angeles, CA**
Research Assistant, Advisor: Prof. Ram Nevatia *Aug. 2019 - present*

- **Query Grounding:** Object localization and referring based on the query relevant with the image.
- **Referring Relationship:** Relationship analysis for the objects detected in the same image. [CVPRW 2020]
- **Mesh Reconstruction:** Improved the performance of reconstruction of 3D mesh from SDF value [ECCV 2020]

Multimedia Signal Processing Lab, Tsinghua University **Beijing, China**
Research Assistant, Advisor: Prof. Ji Wu *Oct. 2018 - Jun. 2019*

- **Noisy-labeled Image Segmentation:** Improved the performance of pixel-wise segmentation network while part of training samples are noisy-labeled. [MICCAI 2019]
- **Large-scale Biomedical Image Segmentation:** Set up a biomedical image segmentation system for biomedical images.

Visual Computing Group, Harvard University **Cambridge, MA**
Undergraduate Research Intern, Advisor: Prof. Hanspeter Pfister *Jun. 2018 - Sep. 2018*

- **3D segmentation:** Improved the 3D segmentation pipeline for connectomic projects and generated state-of-the-art result on the same quality of affinities compared with present methods, got 3^{rd} place on SNEMI3D public dataset.
- **Graphs Reconstruction:** Set up graph improvement step for error correction in connectomic segmentation. [CVPR 2019]

i-Vision Group **Beijing, China**
Research Assistant, Advisor: Prof. Jiwen Lu *Feb. 2018 - Apr. 2019*

- **Metric Learning:** Applied hardness-aware strategy to improve efficiency and result of metric learning.
- **Point Cloud Reconstruction:** Investigated point cloud completion and autoencoder framework for 3D reconstruction task.
- **Self-supervised Learning:** Applied self-supervision strategy as pretext for 3D point cloud classification.

COURSE PROJECTS

Structural Relational Reasoning for Point Clouds Structural relational network for reasoning for point clouds.
Hardness-aware Deep Metric Learning Automatically use hard samples generation for metric learning sampling.
Competition and Lecture Management System Lecture management system with WeChat and website versions.
Video-audio Similarity Evaluation System Evaluating similarity between given audio and visual fragments.
Online Big Data Face Recognition System Real time face recognition with big data management.