Haidong ZHU

https://zhu-haidong.github.io/

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Education

University of Southern California — Los Angeles, CA
Ph.D. in Computer Science
Advisor: Prof. Ram Nevatia — *Aug. 2019 – Dec. 2024 (expected)*

University of Southern California — Los Angeles, CA
M.S. in Computer Science
GPA: 4.00/4.00 — *Aug. 2019 – May. 2021 (expected)*

Tsinghua University — Beijing, China
B.E. in Electronic Information Science and Technology
GPA: 3.70/4.00 — *Aug. 2015 – Jun. 2019*

Research Experience

University of Southern California — Los Angeles, CA
Research Assistant
Advisor: Prof. Ram Nevatia — *Aug. 2019 – present*

Harvard University — Cambridge, MA
Visiting Undergraduate Research Intern
Advisor: Prof. Hanspeter Pfister — *Jul. 2018 – Sept. 2018*

Tsinghua University — Beijing, China
Undergraduate Research Assistant
Advisor: Prof. Jiansheng Chen, Jiwen Lu and Ji Wu — *May 2017 – Jun. 2019*

Skills

Programming Skills: Java, C/C++, MATLAB, Python, Git, Verilog, Linux

Deep Learning Frameworks: Caffe, PyTorch, TensorFlow, Keras, Chainer

Manuscripts

Chuanzi He, Haidong Zhu, Jiyang Gao, Kan Chen, and Ram Nevatia, **PARR: Predicate Analysis for Referring Relationships**, *Under review.*

Yueqi Duan, Haidong Zhu, Chaojian Li, Jiwen Lu, and Jie Zhou, **Unsupervised 3D Feature Learning via Point Cloud Completion**, *Under review.*

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.*

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

Professional Activities

Reviewer: ICME 2020

Research Projects

IRIS Computer Vision Group, University of Southern California — Los Angeles, CA
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.

Visual Computing Group, Harvard University — Cambridge, MA
Advisor: Prof. Hanspeter Pfister — *Jun. 2018 - Sept. 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.

Multimedia Signal Processing Lab, Tsinghua University — Beijing, China
Advisor: Prof. Ji Wu — *Feb. 2018 - Apr. 2019*

Noisy-labeled Image Segmentation: Improved the performance of pixel-wise segmentation network while part of training samples are noisy-labeled.

Meta Learning: Introduced meta-learning methods for assessing the quality of the input image without annotations.

i-Vision Group, Tsinghua University — Beijing, China
Advisor: Associate Prof. Jiwen Lu — *Feb. 2018 - Apr. 2019*

Metric Learning: Employed hardness-aware strategy to improve efficiency and result of metric learning.

3D Vision: Investigated point cloud completion and autoencoder framework for 3D reconstruction task.

Self-supervised Learning: Employed self-supervision strategy as pretext for 3D point cloud classification.

Information Cognition and Intelligent System Lab, Tsinghua University — Beijing, China
Advisor: Associate Prof. Jiansheng Chen — *Jun. 2017 - Jan. 2018*

Liveness Detection System: Embedded the liveness detection strategy on mobile chips and systems.

Big Data System: Set up the human identity system for huge information management and relation prediction.

Image Caption: Studied the overfitting cases in image captioning models.

Projects and Coursework

Structural Relational Reasoning for Point Clouds: Introduced structural relational network for reasoning.

Hardness-aware Deep Metric Learning: Hardness samples generation for metric learning sampling.

Competition and Lecture Management System: Lecture management system with wechat and website version.

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.

Awards and Honors

Outstanding Undergrad Thesis	2019
Scholarship for Top Research Projects	2018
Scholarship for Academic Excellence	2018
3rd Place in SNEMI3D Challenge	2018
Scholarship for Social Practice Excellence	2016/2017
Scholarship for Voluntary and Public Excellence	2016
2nd Prize in Tsinghua Volunteer Activity	2016