HAIDONG ZHU

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EDUCATION

Ph.D. student, Computer Science, University of Southern California, 2019 - 2024 (expected)

B.E., Electronic Information Science and Technology, Tsinghua University, 2015 - 2019

PUBLICATIONS

Haidong Zhu, Ye Yuan, Yiheng Zhu, Xiao Yang, and Ram Nevatia, **OPEN: Order-preserving Point Cloud Encoder-Decoder Network for HumanBody Shape Refinement with Dense Correspondence**, *Under review*.

Haidong Zhu, Zhaoheng Zheng, and Ram Nevatia, **Two-stream Temporal Fusion for Skeleton Action Recognition**, *Under review*.

Haidong Zhu, Mohammad Soleymani, and Ram Nevatia, **Senti-ITEM: Self-supervised Sentiment Analysis via Image-text Matching**, *Under review*.

Haidong Zhu, Arka Sadhu, Zhaoheng Zheng, and Ram Nevatia, **Utilizing Every Image Object for Semi-supervised Phrase Grounding**, *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), pp. 2210-2219, 2021.* [Paper]

Manling Li *et al.*, **GAIA at SM-KBP 2020 - A Dockerized Multi-media Multi-lingual Knowledge Extraction, Clustering, Temporal Tracking and Hypothesis Generation System**, *Text Analysis Conference (TAC), 2020.* [Paper]

Yueqi Duan*, Haidong Zhu*, He Wang, Li Yi, Ram Nevatia, and Leonidas J. Guibas, **Curriculum DeepSDF**, *European Conference on Computer Vision (ECCV), pp. 51-67, 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/CVF 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/CVF Conference on Computer Vision and Pattern Recognition (CVPR), pp. 2089-2098, 2019.* [Paper][Project][Code]

PROFESSIONAL ACTIVITIES

Reviewer:
- Conferences: ICME [2020, 2021], BMVC [2020, 2021], WACV [2021, 2022], IROS [2021], AAAI [2022]
- Journals: IJCV [2021]

TECHNICAL SKILLS

Deep Learning Framework Tensorflow, Keras, PyTorch, Theano, Caffe

Programming Language C/C++, Python, MATLAB, Mathematica, Verilog,

INTERNSHIP

Research Intern @ Bytedance Inc., Mountain View, CA, *Advisor: Dr. Ye Yuan* May. 2021 - Aug. 2021

Undergrad Research Intern @ VCG, Harvard University, Cambridge, MA, *Advisor: Prof. Hanspeter Pfister* Jun. 2018 - Sept. 2018

RESEARCH EXPERIENCE

IRIS Computer Vision Lab, University of Southern California · Los Angeles, CA

Research Assistant, Advisor: Prof. Ram Nevatia · *Aug. 2019 - present*

- **Sentiment Analysis:** Self-supervised sentiment classification with multimodal matching.
- **Skeleton Action Recognition:** Action recognition from skeleton sequences from videos.
- **Query Grounding:** Object localization and referring based on the query relevant with the image. [WACV 2021, TAC 2020]
- **Mesh Reconstruction:** Improved the performance of reconstruction of 3D mesh from SDF value [ECCV 2020]
- **Referring Relationship:** Relationship analysis for the objects detected in the same image. [CVPRW 2020]

Intelligent Creation Lab, ByteDance Inc. · Mountain View, CA

Research Intern, Advisor: Dr. Ye Yuan · *May. 2021 - Aug. 2021*

- **Mesh Reconstruction:** Fine grained mesh for human body shape from single image.
- **Clothing Network:** Automatic clothing network for 3-D human body shape with generation.

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 3rd 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.

AWARDS AND HONORS

Outstanding Undergrad Thesis	2019
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