Haidong ZHU

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Education

- **Tsinghua University** — Beijing, China
  B.E. in Electronic Information Science and Technology
  GPA: 3.70 — *Aug. 2015 – June. 2019*
- **University of Southern California** — Los Angeles, CA
  M.S. in Computer Science
  GPA: - — *Aug. 2019 – May. 2021 (expected)*
- **University of Southern California** — Los Angeles, CA
  Ph.D. in Computer Science
  Advisor: Prof. Ram Nevatia — *Aug. 2019 – Dec. 2024 (expected)*

Skills

- **Programming Skills**: C/C++, MATLAB, Python, Git, Matlab, Verilog
- **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**, *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2019, accepted.*
- 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.*

Research Projects

- **IRIS Computer Vision Group**, University of Southern California — Los Angeles, CA
  Advisor: Prof. Ram Nevatia — *Aug. 2019 - present*
  - **Grounding**: Localize subjects with given language query.
  - **Referring Relationship**: Analyze relationship between given objects by visual and language analysis.
- **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 w/o 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

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