

Xiaoling Hu

E-mail: xiaolhu@cs.stonybrook.edu, *Mobile:* 6312028413
Website: <https://www3.cs.stonybrook.edu/~xiaolhu/>

RESEARCH INTERESTS

I am broadly interested in computer vision, machine learning, medical imaging and topological data analysis, with a focus on using tools from topology community to deal with computer vision problems.

EDUCATION

Ph.D student, Stony Brook University

Department of Computer Science, USA
Jan. 2018 - Now
Advisor: *Prof.* Chao Chen

Master of Science, Tsinghua University

Department of Electronic Engineering
Sep. 2014 - Jul. 2017
Advisor: *Prof.* Wenming Yang

Bachelor of Science, Huazhong University of Science and Technology

School of Electronic Information and Communications
Sep. 2010 - Jul. 2014
(*Advanced Class for Elite Range (ACER)*), **30 out of 500+**)

PUBLICATIONS (* indicates equal contribution or corresponding author)

[12] Aorta Segmentation Using a Topological Constraint.
Saumya Gupta, **Xiaoling Hu***, .. , Chao Chen.
Under review

[11] A Manifold View of Adversarial Risk.
Wenjia Zhang, Yikai Zhang, **Xiaoling Hu**, Mayank Goswami, Chao Chen, Dimitris Metaxas.
Under review

[10] Deep Shape Model Based Network for Myocardium Segmentation.
Xiaoling Hu, Xiao Chen, Terrence Chen, Shanhui Sun.
Under review

[9] Trigger Hunting with a Topological Prior for Trojan Detection.
Xiaoling Hu, Xiao Lin, Michael Cogswell, Yi Yao, Susmit Jha, Chao Chen.
Under review

[8] Topology-Attention ConvLSTM Network for 3D Image Segmentation.
Jiaqi Yang*, **Xiaoling Hu***, Chao Chen, Chialing Tsai.
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2021

[7] Topology-Aware Segmentation Using Discrete Morse Theory.
Xiaoling Hu, Yusu Wang, Li Fuxin, Dimitris Samaras, Chao Chen.
International Conference on Learning Representations (ICLR), 2021 (Spotlight)

[6] 3D topology-preserving segmentation with Z-dimension multi-resolution represen-

tation.

Jiaqi Yang*, **Xiaoling Hu***, Chao Chen, Chialing Tsai.
IEEE International Symposium on Biomedical Imaging (ISBI), 2021

[5] Topology-Preserving Deep Image Segmentation.
Xiaoling Hu, Li Fuxin, Dimitris Samaras, Chao Chen.
Thirty-third Conference on Neural Information Processing Systems (NeurIPS), 2019

[4] Saliency detection based on integration of central bias, reweighting and multi-scale for superpixels.
Xiaoling Hu, Wenming Yang, Fei Zhou, Qingmin Liao.
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2016.

[3] Salient object detection via spectral clustering.
Xiaoling Hu, Wenming Yang, Xingjun Wang, Qingmin Liao.
IEEE Information Technology, Networking, Electronic and Automation Control Conference (ITNEC), 2016.

[2] Dump Truck Recognition Based on SCPSR in Videos.
Wenming Yang, **Xiaoling Hu***, Riqiang Gao, Qingmin Liao.
Proceedings of Chinese Conference on Pattern Recognition (CCPR), 2016. (**Oral**)

[1] Two-stage patch-based sparse multi-value descriptor for face recognition.
Riqiang Gao, Wenming Yang, **Xiaoling Hu** Qingmin Liao.
Proceedings of Visual Communications and Image Processing (VCIP), 2016.

SELECTED HONORS AND AWARDS

NeurIPS travel award, 2019 (Regretfully declined)
First prize of Excellent Scholarship, Tsinghua University, 2016 (5%)
Second prize of Foxconn scholarship, Tsinghua University, 2015 (10%)
Meritorus Winner in 2013 Mathematical Contest in Modeling (MCM), America (8%)
Third Prize in China Undergraduate Mathematical Contest in Modeling, 2012

Experiences

Research assistant Sep. 2018 - Present
Department of Computer Science, Stony Brook University
Topological Data Analysis Lab (TDAL)
Advisor: *Prof.* Chao Chen
TDA, Computer Vision, Medical Imaging

Research Intern May 2021 - Aug. 2021
United Imaging Intelligence (UII)
Mentor: *Dr.* Shanhui Sun
Deep Shape Model Based Network

Research Intern Jun. 2017 - Jan. 2018
Tencent Youtu Lab
Mentor: *Dr.* Yuwing Tai
Clothes detection, attribute prediction

Research assistant Sep. 2014 - Jul. 2017
Department of Electronic Engineering, China
Visual image Processing Lab (VIP)
Advisor: *Prof.* Wenming Yang

Saliency detection, object detection

Research Intern

Jun. 2015 - Oct. 2015

Cloudream, Shenzhen, China

Camera calibration, 3D construction and three-dimensional coloring

SKILLS

Languages: C/C++, Matlab, Python, Lua, Java

OS: Linux, Mac OS, Windows

Tools: Caffe, Torch,, Tensorflow, PyTorch, OpenCV