Yuyin Zhou

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Affiliation

Stanford University — **Palo Alto, CA, USA**
Postdoctoral Research Fellow — *Dec 2020 – present*

Education

Johns Hopkins University — **Baltimore, MD, USA**
Ph.D. in Computer Science — *2016 – 2020*

University of California, Los Angeles — **Los Angeles, CS, USA**
M.S. in Electrical Engineering — *2014 – 2016*

Huazhong University of Science and Technology — **Wuhan, China**
B.S. in Electrical Engineering — *2010 – 2014*

Academic Positions

Google Brain — **Palo Alto, CA, USA**
Research Intern, Supervisor: Dr. Atilla Kiraly — *Jun 2019 – Sep 2019*

Johns Hopkins University — **Baltimore, MD, USA**
Teaching Assistant for EN.601.783 Vision as Bayesian Inference — *Jan 2019 – May 2019*

Google Cloud AI — **Sunnyvale, CA, USA**
Research Intern, Supervisor: Dr. Mei Han — *Jun 2017 – Nov 2017*

Johns Hopkins University — **Baltimore, MD, USA**
Research Assistant, Collaborators: Prof. Bert Vogelstein, Prof. Elliot K. Fishman — *Aug 2016 – Nov 2020*

Princeton University — **Princeton, NJ, USA**
Research Undergraduate Assistant, Supervisor: Prof. Jason W. Fleischer — *Jun 2013 – Aug 2013*

Preprints (* Equal Contribution)

[1] Liangqiong Qu*, **Yuyin Zhou***, Paul Pu Liang, Yingda Xia, Feifei Wang, Ehsan Adeli, Fei-Fei Li, Daniel Rubin. *Rethinking Architecture Design for Tackling Data Heterogeneity in Federated Learning*, **Under Review**

[2] **Yuyin Zhou**, Xianhang Li, Fengze Liu, Xuxi Chen, Ziqi Lin, Lequan Yu, Lei Xing. *Learning to Bootstrap for Combating Label Noise*, **Under Review**

[3] **Yuyin Zhou**, David Dreizin, Yan Wang, Fengze Liu, Wei Shen, Alan Yuille. *External Attention Assisted Multi-Phase Splenic Vascular Injury Segmentation with Limited Data*, **Under Review**

[4] Junfei Xiao, Lequan Yu, Lei Xing, Alan Yuille, **Yuyin Zhou**. *DualNorm-UNet: Incorporating Global and Local Statistics for Robust Medical Image Segmentation*, **Under Review**

[5] Yutong Bai, Haoqi Fan, Ishan Misra, Ganesh Venkatesh, Yongyi Lu, **Yuyin Zhou**, Qihang Yu, Vikas Chandra, Alan Yuille. *Can Temporal Information Help with Contrastive Self-Supervised Learning?* **Under Review**

Publications

[1] Yan Wang, Peng Tang, **Yuyin Zhou**, Wei Shen, Elliot K. Fishman, and Alan Yuille. *Learning Inductive Attention Guidance for Partially Supervised Pancreatic Ductal Adenocarcinoma Prediction*, in IEEE transactions on medical imaging (**TMI**), 2021

[2] Qihang Yu, Yingwei Li, Jieru Mei, **Yuyin Zhou**, Alan L Yuille. *CAKES: Channel-wise Automatic KErnel Shrinking for Efficient 3D Network*, AAAI Conference on Artificial Intelligence (**AAAI**), 2021

[3] David Dreizin, **Yuyin Zhou**, Shuhao Fu, Yan Wang, Guang Li, Kathryn Champ, Eliot Siegel, Ze Wang, Tina Chen, Alan Yuille. *A Multiscale Deep Learning Method for Quantitative Visualization of Traumatic Hemoperitoneum at CT: Assessment of Feasibility and Comparison with Subjective Categorical Estimation*, in **Radiology: Artificial Intelligence**, 2020

[4] Song Bai, Yingwei Li, **Yuyin Zhou**, Qizhu Li, Philip H.S. Torr. *Adversarial Metric Attack and Defense for Person Re-identification*, in IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2020

[5] Yingda Xia, Qihang Yu, Wei Shen, **Yuyin Zhou**, Elliot Fishman, Alan Yuille. *Detecting Pancreatic Adenocarcinoma in Multi-phase CT Scans via Alignment Ensemble*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2020

[6] Shuhao Fu, Yongyi Lu, Yan Wang, **Yuyin Zhou**, Wei Shen, Elliot Fishman, Alan Yuille. *Domain Adaptive Relational Reasoning for 3D Multi-Organ Segmentation*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2020

[7] David Dreizin, **Yuyin Zhou**, Tina Chen, Guang Li, Alan Yuille, Ashley McLenithan, Jonathan Morrison. *Deep learning-based quantitative visualization and measurement of extraperitoneal hematoma volumes in patients with pelvic fractures*, in **Journal of Trauma and Acute Care Surgery**, 2020

[8] Yingwei Li, Xiaojie Jin, Jieru Mei, Xiaochen Lian, Linjie Yang, Cihang Xie, Qihang Yu, **Yuyin Zhou**, Song Bai, Alan Yuille. *Neural Architecture Search for Lightweight Non-Local Networks*, in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020

[9] Yan Wang, Xu Wei, Fengze Liu, Jieneng Chen, **Yuyin Zhou**, Wei Shen, Elliot Fishman, Alan Yuille. *Deep Distance Transform for Tubular Structure Segmentation in CT Scans*, in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020 (**Oral Presentation**)

[10] Lifeng Huang, Chengying Gao, **Yuyin Zhou**, Cihang Xie, Alan Yuille, Changqing Zou, Ning Liu. *UPC: Learning Universal Physical Camouflage Attacks on Object Detectors*, in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020

[11] Yingwei Li, Song Bai, **Yuyin Zhou**, Cihang Xie, Zhishuai Zhang, Alan Yuille. *Learning Transferable Adversarial Examples via Ghost Networks*, in AAAI Conference on Artificial Intelligence (**AAAI**), 2020

[12] Linda C. Chu, Seyoun Park, Satomi Kawamoto, Yan Wang, **Yuyin Zhou**, Wei Shen, Zhuotun Zhu, Yingda Xia, Lingxi Xie, Fengze Liu, Qihang Yu, Daniel F. Fouladi, Shahab Shayesteh, Eva Zinreich, Jefferson S. Graves, Karen M. Horton, Alan Yuille, Ralph H. Hruban, Kenneth W. Kinzler, Bert Vogelstein, Elliot Fishman. *Application of Deep Learning to Pancreatic Cancer Detection: Lessons Learned From Our Initial Experience*, in **Journal of the American College of Radiology**, 2019

[13] Yingwei Li, Zhuotun Zhu, **Yuyin Zhou**, Yingda Xia, Wei Shen, Elliot Fishman, and Alan Yuille. *Volumetric Medical Image Segmentation: A 3D Deep Coarse-to-fine Framework and Its Adversarial Examples*, in Deep Learning and Convolutional Neural Networks for Medical Image Computing, Advances in Computer Vision and Pattern Recognition, Springer, 2019

[14] **Yuyin Zhou**, Qihang Yu, Yan Wang, Lingxi Xie, Wei Shen, Elliot Fishman and Alan Yuille. *2D-Based Coarse-to-Fine Approaches for Small Target Segmentation in Abdominal CT Scans*, in Deep Learning and Convolutional Neural Networks for Medical Image and Clinical Informatics, Advances in Computer Vision and Pattern Recognition, Springer, 2019

[15] Lingxi Xie, Qihang Yu, **Yuyin Zhou**, Yan Wang, Elliot Fishman, Alan Yuille. *Recurrent Saliency Transformation Network for Tiny Target Segmentation in Abdominal CT Scans*, in IEEE transactions on medical imaging (**TMI**), 2019

[16] David Dreizin, **Yuyin Zhou**, Yixiao Zhang, Nikki Tirada, Alan Yuille. *Performance of a Deep Learning Algorithm for Automated Segmentation and Quantification of Traumatic Pelvic Hematomas on CT*, in **Journal of Digital Imaging**, 2019

[17] **Yuyin Zhou**, Yingwei Li, Zhishuai Zhang, Yan Wang, Alan Yuille, Seyoun Park. *Hyper-Pairing Network for Multi-Phase Pancreatic Ductal Adenocarcinoma Segmentation*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2019

[18] Zhishuai Zhang, **Yuyin Zhou**, Wei Shen, Elliot Fishman, Alan Yuille. *Lesion Detection by Efficiently Bridging 3D Context*, in Machine Learning in Medical Imaging (**MLMI**) Workshop of MICCAI, 2019 (**Oral Presentation**)

[19] **Yuyin Zhou**, David Dreizin, Yingwei Li, Zhishuai Zhang, Yan Wang, Alan Yuille. *Multi-Scale Attentional Network for Multi-Focal Segmentation of Active Bleed after Pelvic Fractures*, in Machine Learning in Medical Imaging (**MLMI**) Workshop of MICCAI, 2019

[20] Fengze Liu, **Yuyin Zhou**, Elliot Fishman, Alan Yuille. *FusionNet: Incorporating Shape and Texture for Abnormality Detection in 3D Abdominal CT Scans*, in Machine Learning in Medical Imaging (**MLMI**) Workshop of MICCAI, 2019

[21] **Yuyin Zhou**, Zhe Li, Song Bai, Chong Wang, Xinlei Chen, Mei Han, Elliot Fishman, Alan Yuille. *Prior-aware Neural Network for Partially-Supervised Multi-Organ Segmentation*, in IEEE International Conference on Computer Vision (**ICCV**), 2019

[22] Cihang Xie, Zhishuai Zhang, **Yuyin Zhou**, Song Bai, Jianyu Wang, Zhou Ren, Alan Yuille. *Improving Transferability of Adversarial Examples with Input Diversity*, in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019

[23] Yan Wang*, **Yuyin Zhou***, Wei Shen, Seyoun Park, Elliot Fishman, Alan Yuille. *Abdominal multi-organ segmentation with organ-attention networks and statistical fusion*, in Medical Image Analysis (**MedIA**) (* equally contribution), 2019

[24] **Yuyin Zhou**, Yan Wang, Peng Tang, Song Bai, Wei Shen, Elliot Fishman, Alan Yuille. *Semi-Supervised 3D Multi-Organ Segmentation via Deep Multi-Planar Co-Training*, in IEEE Winter Conference on Applications of Computer Vision (**WACV**), 2019

[25] Yan Wang, **Yuyin Zhou**, Peng Tang, Wei Shen, Elliot Fishman, Alan Yuille. *Training Multi-organ Segmentation Networks with Sample Selection by Relaxed Upper Confident Bound*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2018 (**Oral Presentation**)

[26] Qihang Yu, Lingxi Xie, Yan Wang, **Yuyin Zhou**, Elliot Fishman, Alan Yuille. *Recurrent Saliency Transformation Network: Incorporating Multi-Stage Visual Cues for Small Organ Segmentation*, in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018

[27] Jianyu Wang, Zhishuai Zhang, Cihang Xie, **Yuyin Zhou**, Vittal Premachandran, Jun Zhu, Lingxi Xie, Alan Yuille. *Visual Concepts and Compositional Voting*, in **Annals of Mathematical Sciences and Applications**, 2018

[28] Cihang Xie, Jianyu Wang, Zhishuai Zhang, **Yuyin Zhou**, Lingxi Xie, Alan Yuille. *Adversarial Examples for Semantic Segmentation and Object Detection*, in IEEE International Conference on Computer Vision (**ICCV**), 2017

[29] **Yuyin Zhou**, Lingxi Xie, Wei Shen, Yan Wang, Elliot Fishman, Alan Yuille. *A Fixed-Point Model for Pancreas Segmentation in Abdominal CT Scans*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2017 (Student Travel Award)

[30] **Yuyin Zhou**, Lingxi Xie, Elliot Fishman, Alan Yuille. *Deep Supervision for Pancreatic Cyst Segmentation in Abdominal CT Scans*, in International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2017 (Student Travel Award)

Selected Talks

- *Diagnose Like a Doctor: Integrating Domain Knowledge into Medical AI*
  UC Santa Cruz — Mar 2021
  Stanford University — April 2021
  Medical Computer Vision Workshop@CVPR2021 — *Jun 2021*
  Massachusetts Institute of Technology — *Jun 2021*

- *Medical Machine Intelligence: Data-Efficiency and Knowledge-Awareness*
  University of Pittsburgh — *Dec 2020*
  University of Leicester — *Dec 2020*
  UC Merced — Feb 2021

- *Towards Generalized Medical Image Analysis*
  Stanford University *Jul 2020*
  Vanderbilt University *Jun 2020*
- *Lesion Detection by Efficiently Bridging 3D Context*
  Machine Learning in Medical Imaging Workshop of MICCAI *Oct 2019*
- *Prior-aware Neural Network for Partially-Supervised Multi-Organ Segmentation and Hyper-Pairing Network for Multi-Phase PDAC Segmentation*
  PAII-JHU Workshop on Medical Imaging *Sep 2019*
- *Medical Image Registration for Chest X-Ray Images*
  Google Health *Sep 2019*
- *Semi-supervised 3D abdominal multi-organ segmentation via deep multi-planar co-training*
  1st JHU Computer Vision Workshop *Apr 2019*
- *3D network-based pancreatic cancer survival prediction from CT scans*
  (**2nd** place at Pancreatic Cancer Survival Prediction Challenge)
  MICCAI 2018 Workshop and Challenges in Computational Precision Medicine *Sep 2018*
- *Training Multi-organ Segmentation Networks with Sample Selection by Relaxed Upper Confident Bound*
  MICCAI 2018 *Sep 2018*
- *Introduction to Medical Image Segmentation*
  Google Cloud AI *Jun 2017*

Academic Services

Workflow Co-chair

- ML4H 2021: Machine Learning for Health

Organizer

- 1st Workshop on Computer Vision for Automated Medical Diagnosis (CVAMD), in conjunction with ICCV conference, 2021
- 1st Workshop on Interpretable Machine Learning in Healthcare (IMLH), in conjunction with ICML conference, 2021
- 1st lightweight NAS challenge and moving beyond, in conjunction with CVPR conference, 2021

Senior Program Committee

- International Joint Conference on Artificial Intelligence (IJCAI), 2021

Conference Reviewer

- Computer Vision and Pattern Recognition (CVPR)
- International Conference on Learning Representations (ICLR)
- European Conference on Computer Vision (ECCV)
- International Conference on Computer Vision (ICCV)
- Conference on Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- AAAI Conference on Artificial Intelligence (AAAI)
- International Joint Conference on Artificial Intelligence (IJCAI)
- International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)

- Asian Conference on Computer Vision (ACCV)
- Winter Conference on Applications of Computer Vision (WACV)

Journal Reviewer

- Nature Machine Intelligence
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Medical Imaging (TMI)
- IEEE Journal of Biomedical and Health Informatics (JBHI)
- Journal of Medical Imaging
- Neurocomputing