



JUNFEI XIAO

Baltimore, Maryland

<https://lambert-x.github.io>

☎ 410-949-7876 ✉ xiaojf97@gmail.com  

Education

Johns Hopkins University

Ph.D. in Computer Science

2022 -

Baltimore, Maryland

Johns Hopkins University

M.S.E in Computer Science, GPA: 3.97/4.0

Sep. 2019 – May 2021

Baltimore, Maryland

Beihang University

B.E. in Mechanical Engineering, Double Degree in Mathematics, GPA: 3.8/4.0 (Top 2%)

Sep. 2015 – June 2019

Beijing, China

Publications and Manuscripts

- [5] **Junfei Xiao**, Yutong Bai, Alan Yuille, and Zongwei Zhou. “Delving into Masked Autoencoders for Multi-Label Chest X-ray Classification”. In: *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*. 2023.
- [4] Yutong Bai, Zeyu Wang, **Junfei Xiao**, Chen Wei, Huiyu Wang, Alan Yuille, Yuyin Zhou, and Cihang Xie. “Masked Autoencoders Enable Efficient Knowledge Distillers”. In: *arXiv:2208.12256, Under Review* (2022).
- [3] **Junfei Xiao**, Longlong Jing, Lin Zhang, Ju He, Qi She, Zongwei Zhou, Alan Yuille, and Yingwei Li. “Learning from Temporal Gradient for Semi-supervised Action Recognition”. In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)* (2022).
- [2] **Junfei Xiao**, Lequan Yu, Zongwei Zhou, Yutong Bai, Lei Xing, Alan Yuille, and Yuyin Zhou. “CateNorm: Categorical Normalization for Robust Medical Image Segmentation”. In: *MICCAI Workshop on Domain Adaptation and Representation Transfer*. Springer. 2022, **(Best Paper Honorable Mention)**.
- [1] Siqi Wang, Lei Li, Yufeng Chen, Yueping Wang, Wenguang Sun, **Junfei Xiao**, Dylan Wainwright, Tianmiao Wang, Robert J Wood, and Li Wen. “A bio-robotic remora disc with attachment and detachment capabilities for reversible underwater hitchhiking”. In: *2019 International Conference on Robotics and Automation (ICRA)*. 2019.

Research Experience

CCVL Lab, Johns Hopkins University

Research Assistant, Advisor: Alan Yuille

Sep. 2021 – Present

Baltimore, Maryland

CCVL Lab, Johns Hopkins University

Research Intern, Advisor: Alan Yuille

June 2020 – Sep. 2021

Baltimore, Maryland

Medical Robotics Surgery Lab, Beihang University

Research Assistant, Advisor: Junchen Wang

Feb. 2019 – June 2019

Beijing, China

Biomechanics and Soft Robotics Lab, Beihang University

Research Assistant, Advisor: Li Wen

Sep. 2017 – Aug. 2018

Beijing, China

Selected Projects

Semi-supervised Learning for Action Recognition [\[Paper\]](#) [\[Code\]](#)

CVPR 2022

- Propose a method that explicitly distills the fine-grained motion representations from temporal gradient (TG) and imposes consistency across different modalities (i.e., RGB and TG).
- The performance of semi-supervised action recognition is significantly improved without additional computation or parameters during inference.
- Our method achieves the state-of-the-art performance on three video action recognition benchmarks (i.e., Kinetics-400, UCF-101, and HMDB-51) under several typical semi-supervised settings (i.e., different ratios of labeled data).

Multi-domain Learning for Medical Image Segmentation [\[Paper\]](#) [\[Code\]](#)

MICCAI Workshop 2022

- Propose a method to introduce the semantic class information into normalization layers by incorporating both global image-level statistics and local region-wise statistics.

- The method exploits semantic knowledge at normalization and yields more discriminative features for robust segmentation results.
- The method shows remarkable robustness to data from different domains.

Few-shot Food Detection [\[Report\]](#) [\[Code\]](#)

- Propose a method to learn a feature extractor with base classes and fine-tune the classifier and bounding box regressor with few shot examples from novel classes

SGD-based Annealing Algorithms for Neural Network Optimization [\[Report\]](#)

- Propose two different annealing strategies to improve SGD for neural network optimization.
- Experiment with the proposed algorithms on a 2-D point binary classification dataset and the Fashion-MNIST dataset. The two proposed algorithms with tuned scale of noise and initial temperature show remarkable performance.

Honors and Awards

1st Place in Robust Vision Challenge - Semantic Segmentation Track (ECCV 2022)	2022
Best Paper Honorable Mention - DART (MICCAI Workshop)	2022
Academic Excellence Award	2016, 2017, 2018
JJWorld Scholarship	2017
National Scholarship (Top 0.1% national wide)	2016

Service

Program Committee / Reviewer:

ICML 2021/2022 Workshop – Interpretable Machine Learning in Healthcare, **CVPR 2022**, **ECCV 2022**

Technical Skills

Programming Languages: Python, Matlab, C/C++, SQL, Ocaml, Julia
Tools: L^AT_EX, Git, SolidWorks
Deep Learning Frameworks: Pytorch, Tensorflow
GRE: 162 (Verbal) + 170 (Math) + 3.5 (Writing)