Hao Chen

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Artificial intelligence is about the people, not the machines.

Education

PhD in Computer Science — Sep. 2018 - Now
University of Maryland, Colledge Park (UMD)
Advisor: Abhinav Shrivastava

Master in Pattern Recognition & Intelligent System — Sep. 2015 - Jun. 2018
Huazhong University of Science&Technology (HUST)
Advisor: Guoyou Wang

B.Eng in Optoelectronic Information Engineering — Sep. 2011 - Jun. 2015
Huazhong University of Science&Technology (HUST)

Interests

Deep learning, computer vision, particularly object detection, image recognition and video understanding

Research Projects

Hierarchy relation network for object detection — Apr. 2020
Problem: Introduce hierarchy relation reasoning through graph neural network for object detection task
Paper: HG-RCNN: Hierarchy graph relation network for object detection

Ensemble Learning for Deep ConvNet — Jul. 2019
Problem: How to embed explicit ensemble learning in a single ConvNet
Paper: Group Ensemble: Learning an Ensemble of ConvNets in a single ConvNet

3D dropout and attention modeling for video understanding — Apr. 2019
Problem: How to embed explicit ensemble learning in a single ConvNet

Weighted Intersection over Union — Oct. 2018
Problem: Define a scale-adaptive IoU metric for object detection

Semi-Supervised Transfer Detection — Dec. 2017
Problem: How to train a detector with a few fully-annotated images and many weakly-labelled images, which is based the previous LSTD work.
Paper: Progressive Object Transfer Detection

Low-Shot Transfer Detection: — Apr. 2017
Problem: How to train a detector with only a few annotated images.
Paper: LSTD: A Low-Shot Transfer Detector for Object Detectio

Model Compression and Acceleratio — Jan. 2017
Problem: How to remove the redundancy of deep CNNs and speedup the inference , especially when transferring general models to a specific task

Publications

• HG-RCNN: Hierarchy graph relation network for object detection
(**CVPR-2021 submission**)
Hao Chen, Abhinav Shrivastava

• Group Ensemble: Learning an Ensemble of ConvNets in a single ConvNet
(**CVPR-2021 submission**)
Hao Chen, Abhinav Shrivastava

• Progressive Object Transfer Detection (**TIP-2020**)
Hao Chen, Yali Wang, Guoyou Wang, Xiang Bai, Yu Qiao

• LSTD: A Low-Shot Transfer Detector for Object Detection (**AAAI-18 Spotlight**)
Hao Chen, Yali Wang, Guoyou Wang, Yu Qiao

Experience

• Multimedia Lab at Shenzhen Institutes of Advanced Technology Jan. 2017 - Aug. 2017
Visiting student, work closely with Prof. Yu Qiao.

• Teaching assistant for CMSC320 at Fall 2018 (UMD)

• Research assistant for Prof. Abihnav (UMD) (Spring 2019 - now)

Skills

Pytorch, Python, C++, Caffe, OpenCV

Awards

• National Endeavor Fellowship in 2013
• UMD Dean Fellowship 2019-2020