YIHONG CHEN

(+86)13121057522 ⋄ chenyihong@pku.edu.cn

EDUCATION

Peking University, Beijing, China *August 2018 - Present*
Beijing Institute of Big Data Research, Academy for Advanced Interdisciplinary Studies
Master student (supervised by Liwei Wang) in Data Science

Cambridge University, United Kingdom *August 2016*
Visiting student

Xiamen University, Xiamen, China *August 2014 - June 2018*
School of Mathematical Sciences
Bachelor of Science in Mathematics Overall (Major) GPA: 3.78 (3.95)/4.0

PUBLICATION

1. **Yihong Chen**, Zheng Zhang, Yue Cao, Liwei Wang, Stephen Lin and Han Hu, *"RepPoints V2: Verification Meets Regression for Object Detection"*
   Submitted to Conference on Neural Information Processing Systems (NeurIPS) 2020
2. **Yihong Chen**, Yue Cao, Han Hu and Liwei Wang, *"Memory Enhanced Global-Local Aggregation for Video Object Detection"*
   Accepted by IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2020

EXPERIENCE

Microsoft Research Asia, China *Dec. 2019 - Present*
Full-time research intern
I am fortunate to work with and learned a lot from Han Hu, Yue Cao, Zheng Zhang and Steve Lin. My research topics are focused on basic computer vision tasks like object detection, instance segmentation and their extension in video understanding.

PROJECTS

1. **Investigation on Verification and Regression in Object Detection and Beyond.**
   Verification and regression are two general methodologies for solving problems while each has its own strengths: verification is easier to infer accurately, and regression is more efficient and applicable to continuous target variables. So how to efficiently combine them to take the merits of the two worlds to improve model performance is an interesting problem. In the field of object detection, methods based on verification (*e.g.* CornerNet) and regression (*e.g.* FCOS) all demonstrate promising results but behaves quite differently in detail. Motivated by this interesting phenomena, we make a thorough study about verification and regression, and what we find guides us to build a strong object detector. Our observation could also be extended to instance segmentation and other tasks. We take a step closer to understand neural network's behavior with a new perspective.
2. **An Efficient Feature Aggregation Method for Video Object Detection.**
   Video has now become the most prevalent media format around the world. Thus video object detection, which aims to accurately recognize and locate objects in a piece of video, has great application and research value. Motivated by how human recognize objects in videos, we design an efficient aggregation method which enables our model to utilize far richer information than any previous methods while not introducing heavy computation overheads.
   We also open-source world's first library for video object detection, which containing several representative methods in this field. We hope our efforts could help the development of this important field. :) [Code](200+ stars).

HONORS & REWARDS

- summa cum laude, Xiamen University, 2018
- Silver Medal, ACM-ICPC Asia Regional, 2017
- National Scholarship, Ministry of Education of China, 2016
- The Elite Undergraduate Training Program of Math, Ministry of Education of China, 2015-2018
- Bronze Medal, National Olympiad in Informatics (NOI), 2013