

# MMfruitSeg - OpenImage 2019 1st solution

Guanglu Song, Yu Liu, Enze Xie, Junjie Yan, Xiaogang Wang

Multimedia Laboratory, The Chinese University of Hong Kong  
Multimedia Laboratory, Hong Kong University  
Sensetime X-Lab



# Team members

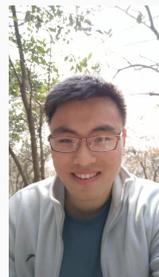
## MMfruitSeg Team



Guanglu Song



Yu Liu



Enze Xie

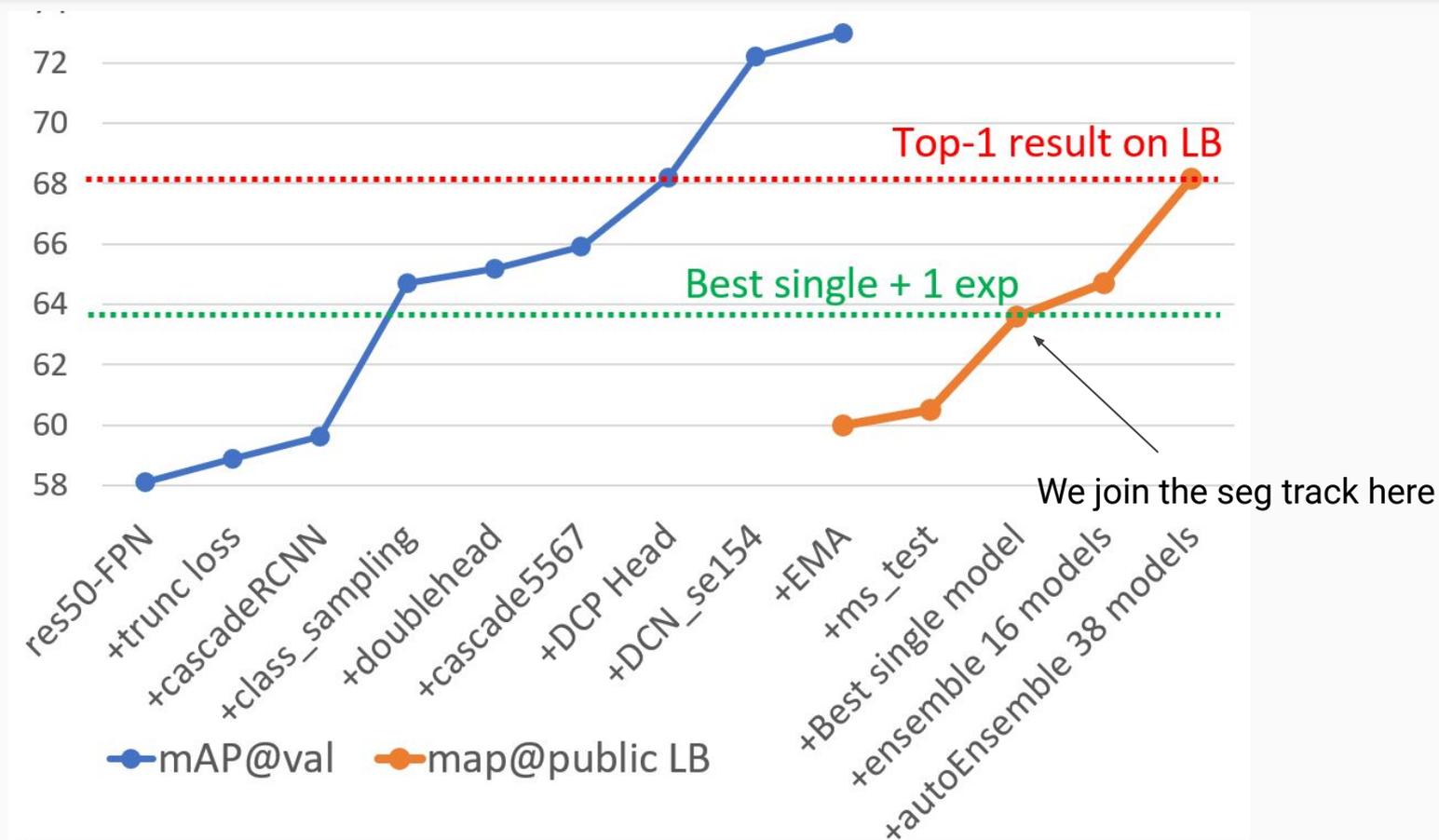


Junjie Yan



Xiaogang Wang

# Results Breakdown on Detection



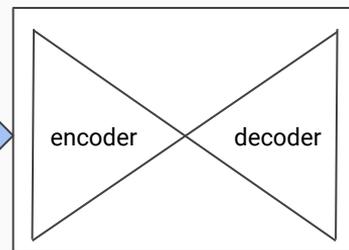
# Solutions

- Pipeline (Instance detection + saliency segmentation)
- Relation between detection performance and segmentation
- Refined Detection
- Model Ensemble
- Results

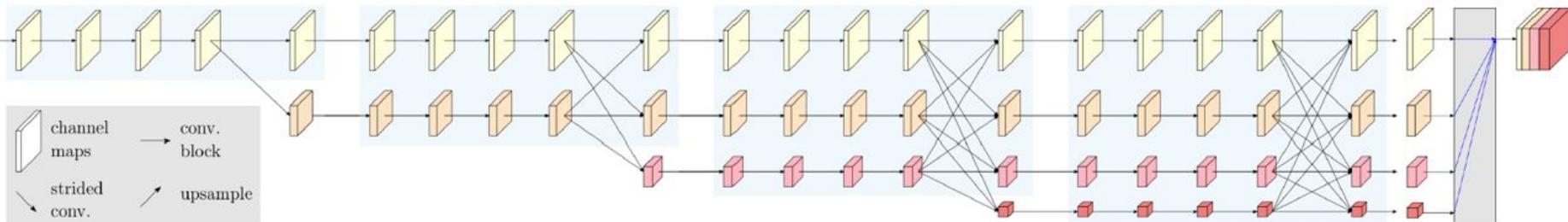
# Instance detection + saliency segmentation



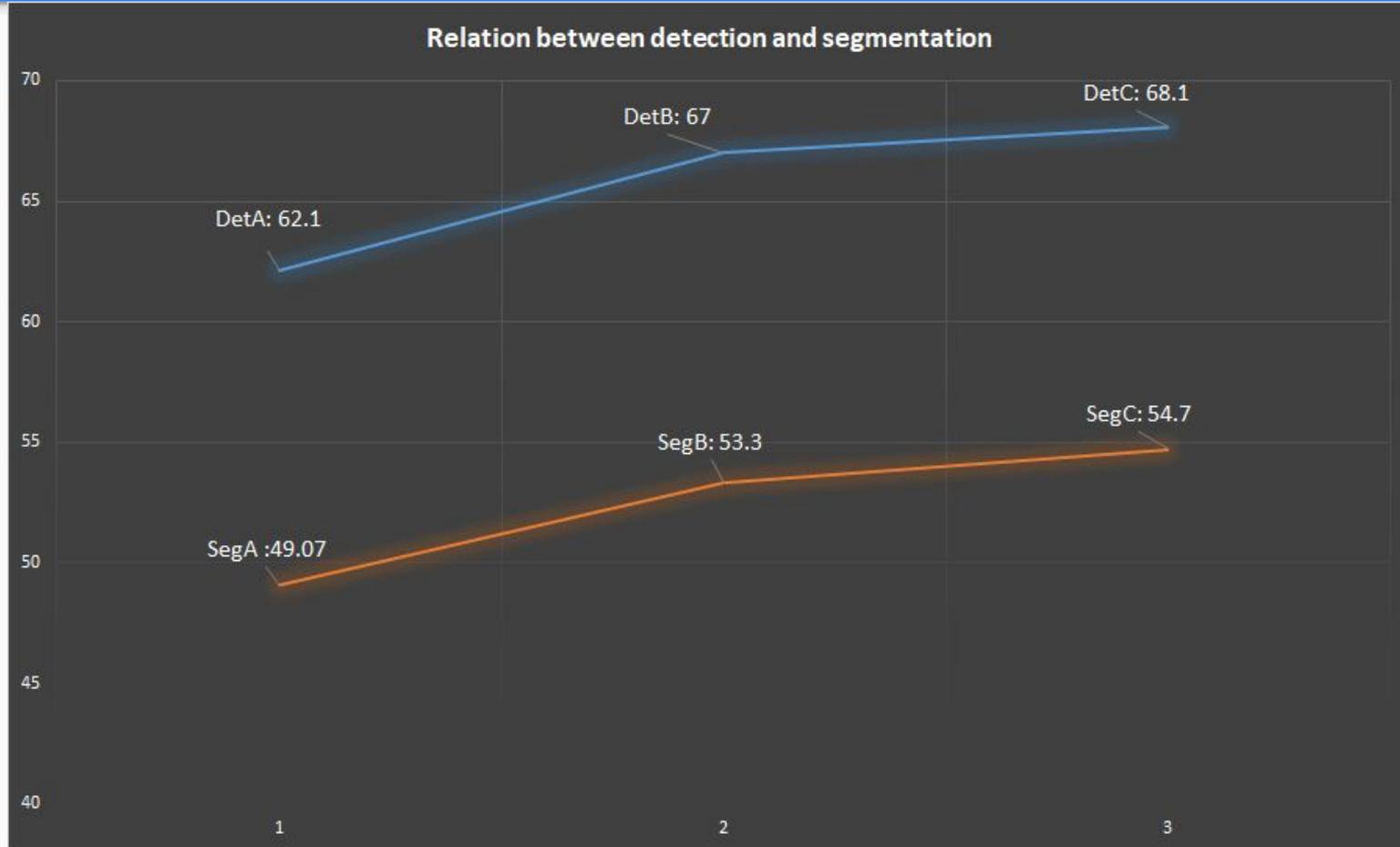
crop & resize



fore/background semantic segmentation



# Relation between detection performance and segmentation



# Refined Detection

Apple



For training detection, the groundtruth boxes are sometimes given with tag 'group'.

All the group boxes are treated as ground truth boxes in detection track, which leads to a large performance gain.

Apple

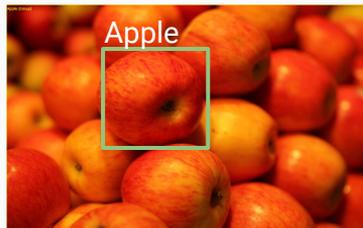


For 'saliency segmentation' stage, it requires tight IoU rather than a high recall.

Using boxes with group are not friendly for this.

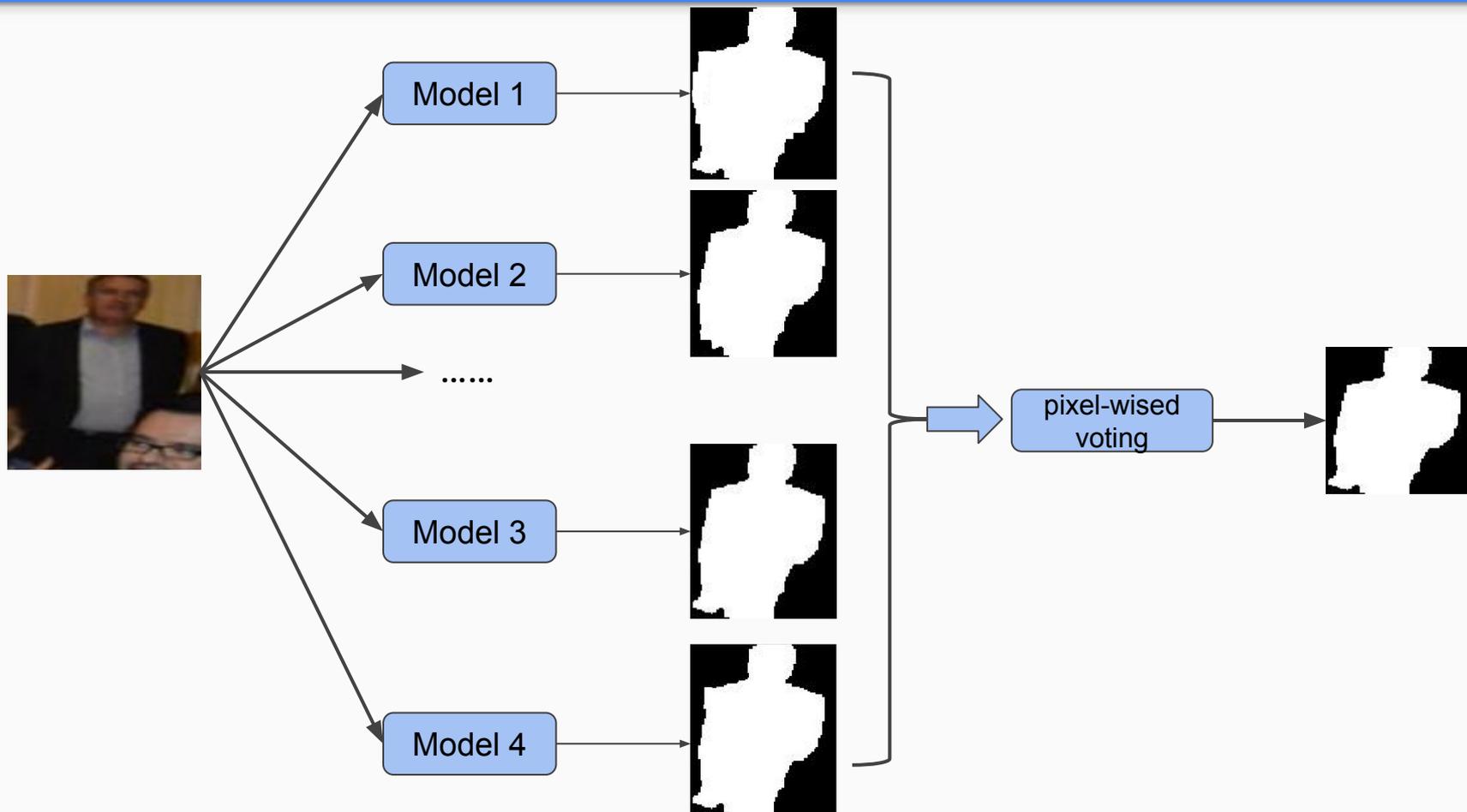
Fine-tune the detectors by non-group boxes only

Apple



Refine the detector

# Model Ensemble



# Results

