



# Multi-Label Image Classification via Knowledge Distillation from Weakly-Supervised Detection

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**Project Page:** <https://yochengliu.github.io/MLIC-KD-WSD/>

# Motivation

multi-label classification



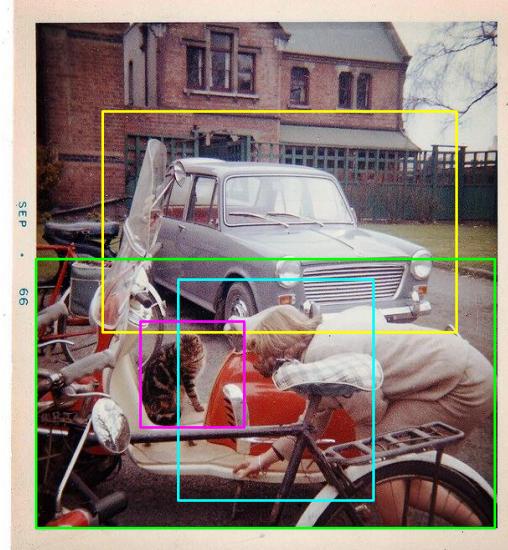
top-3 predictions:

car   truck   carrot

annotations:

person  
cat  
bicycle  
car  
motorcycle

weakly-supervised object detection



top-3 predictions:

car   person   cat

*poor localization* for multiple instances

locate semantic regions

*object-relevant   informative  
image-level annotation*

# Cross-Task Knowledge Distillation

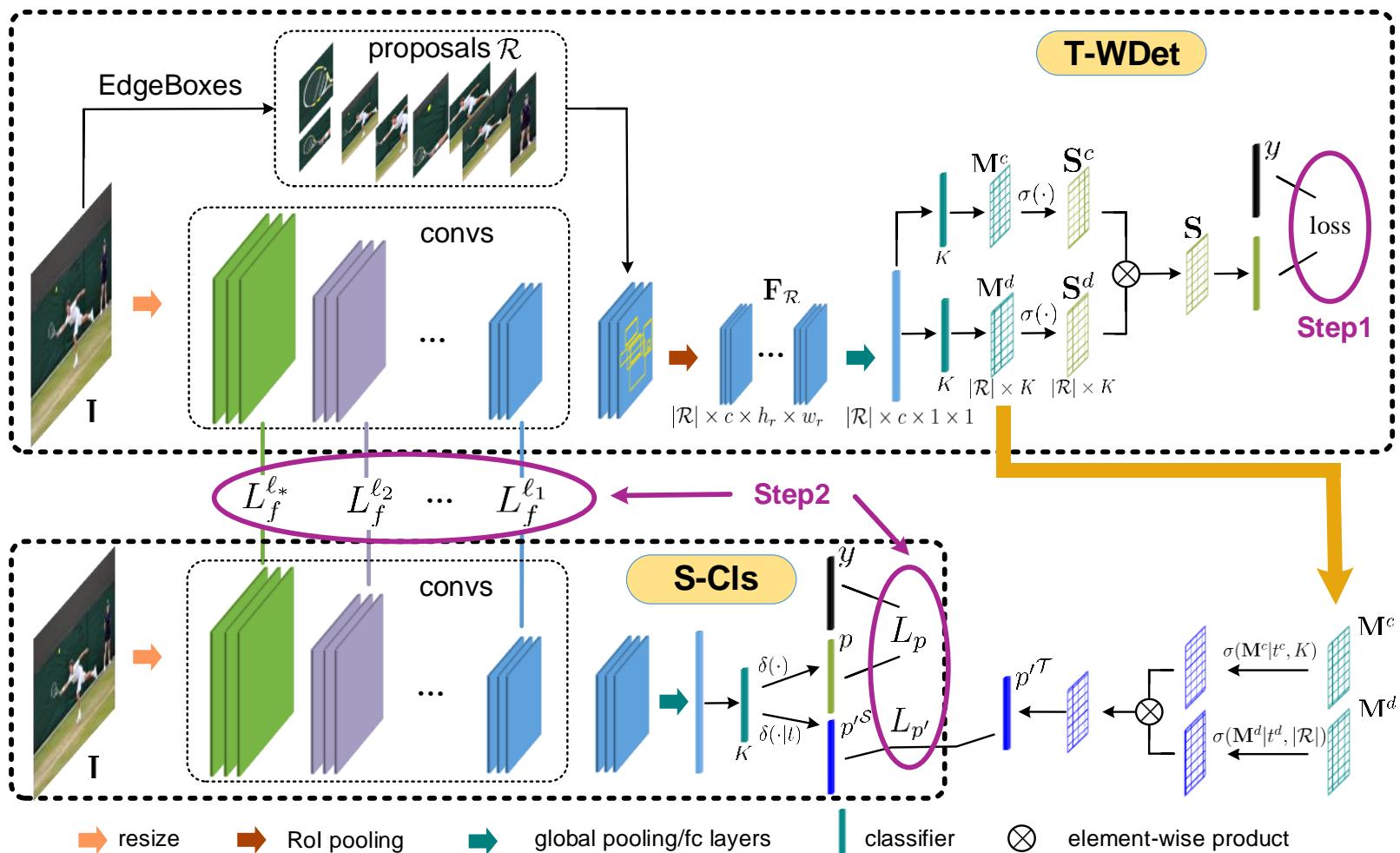
**Step 1:**  
Weakly-Supervised Detection

**Step 2:**  
Knowledge Distillation

**Stage 1:**  
Feature-level transfer

only update convs' params

**Stage 2:**  
Prediction-level transfer  
update all params

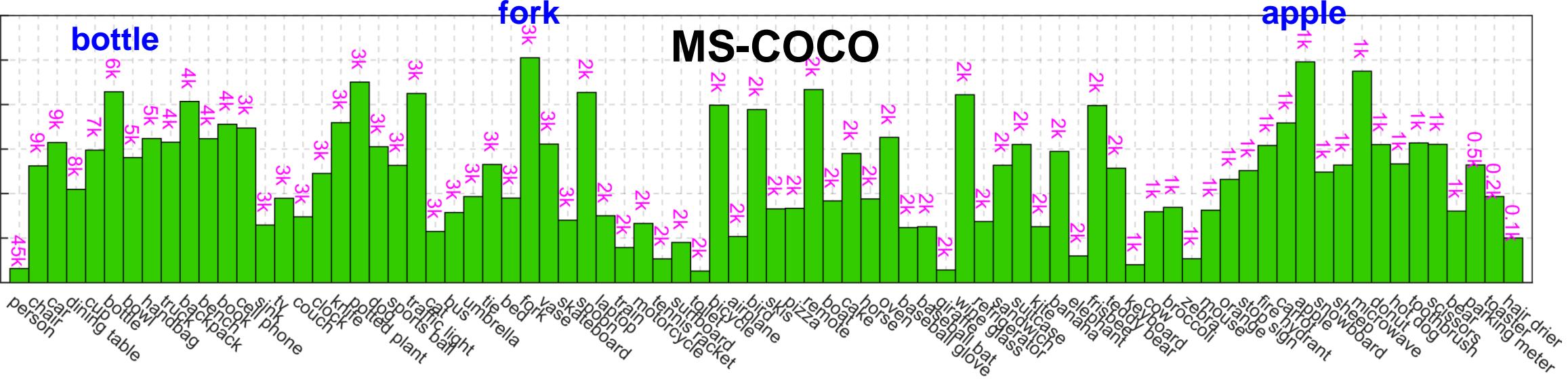


# Experiment

fork

MS-COCO

apple



NUS-WIDE

rainbow

earthquake

