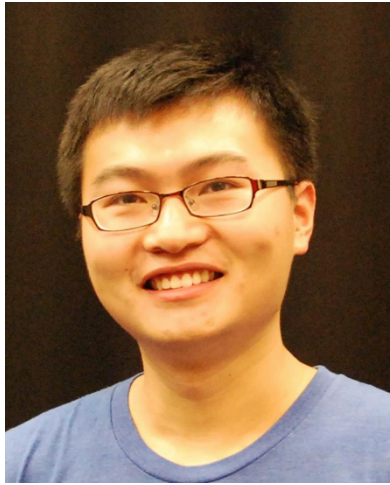# IMAGENET Large Scale Visual Recognition Challenge (ILSVRC) 2016
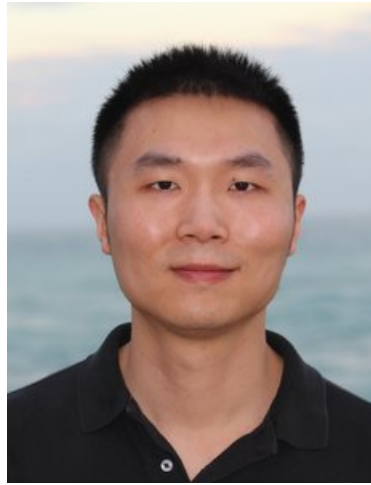
Object Localization (LOC)

Wei Liu
UNC Chapel Hill

Olga Russakovsky
CMU

Jia Deng
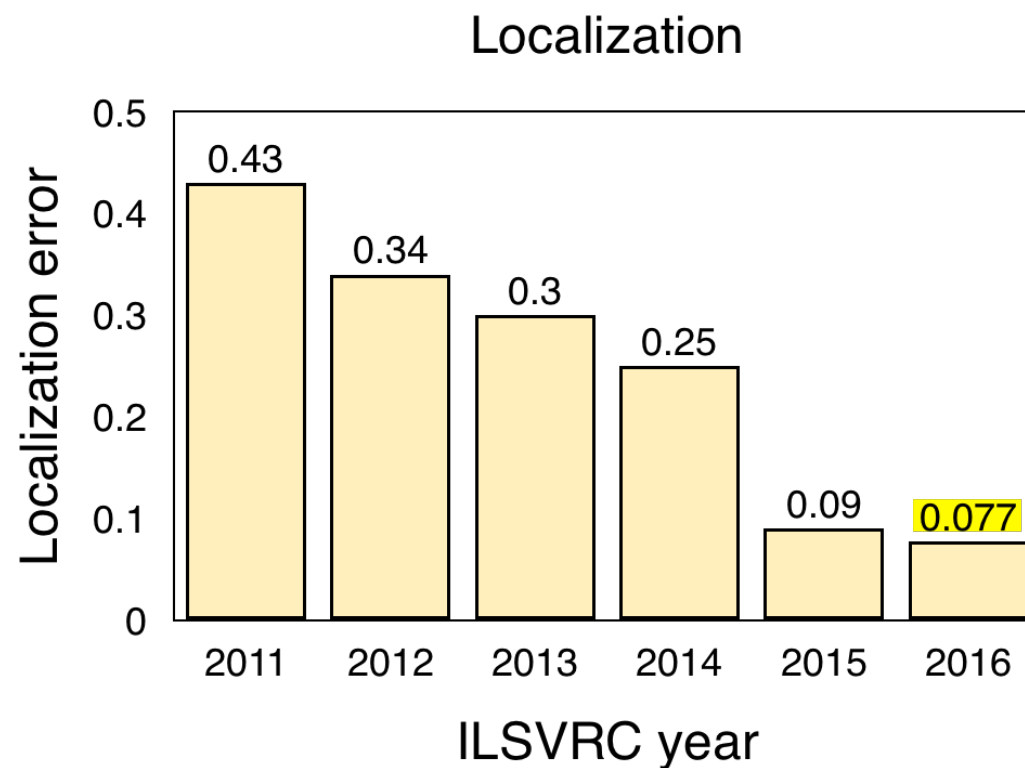Univ. of Michigan

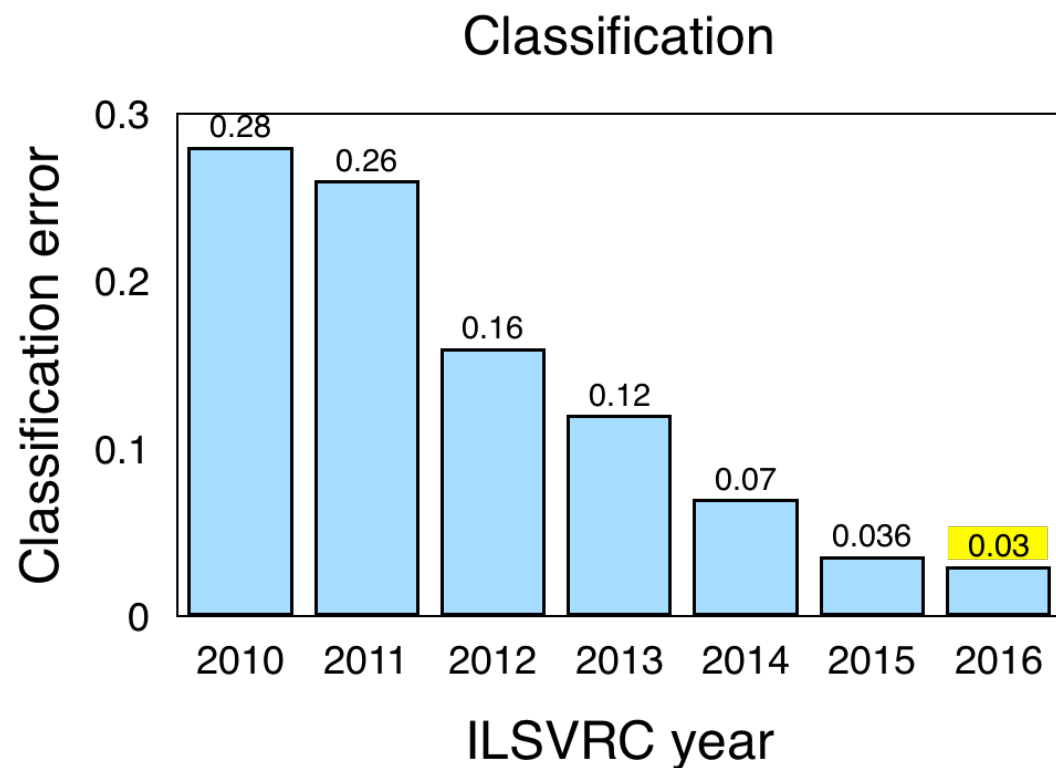Fei-Fei Li
Stanford

Alex Berg
UNC Chapel Hill

Result in ILSVRC over the years

Classification

Localization

ILSVRC image classification (CLS) task

Steel drum

1000 object classes   **1,431,167 images**   **CLS-LOC**

ILSVRC image classification (CLS) task

Steel drum

Output:
Scale
T-shirt
<u>Steel drum</u>
Drumstick
Mud turtle

✔
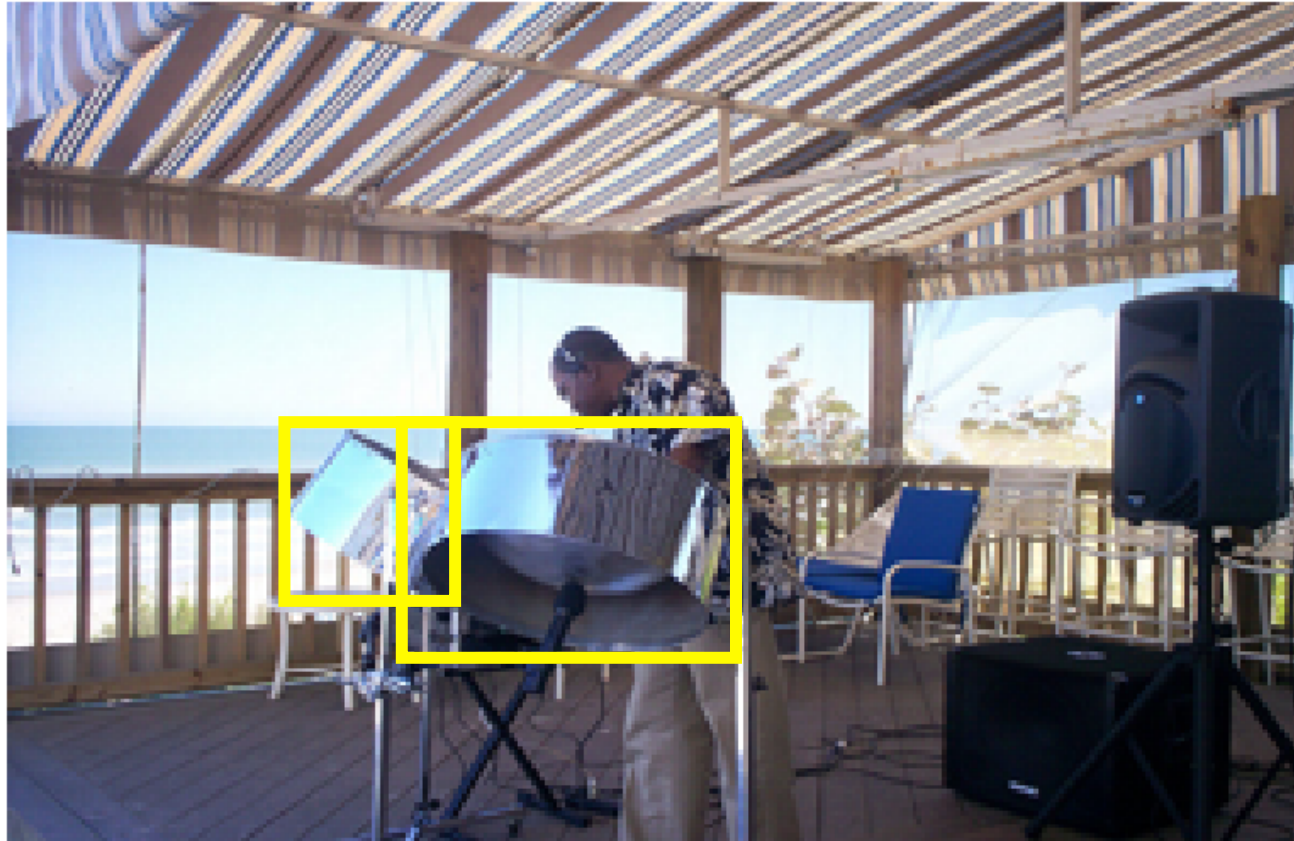
Output:
Scale
T-shirt
Giant panda
Drumstick
Mud turtle

✘

$$\text{Error} = \frac{1}{100,000} \sum_{100,000 \text{ images}} 1[\text{incorrect on image i}]$$

ILSVRC object localization (LOC) task

Steel drum
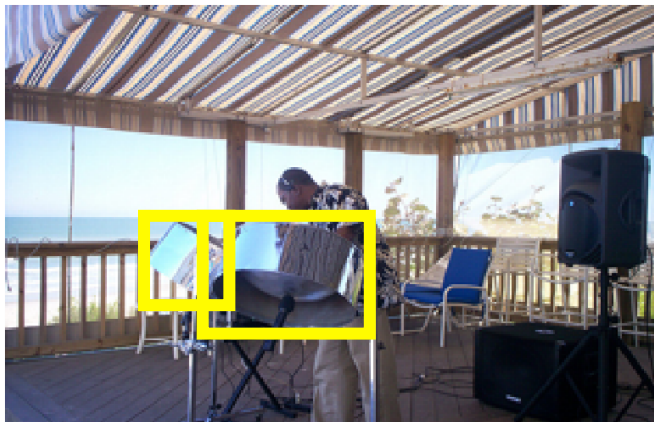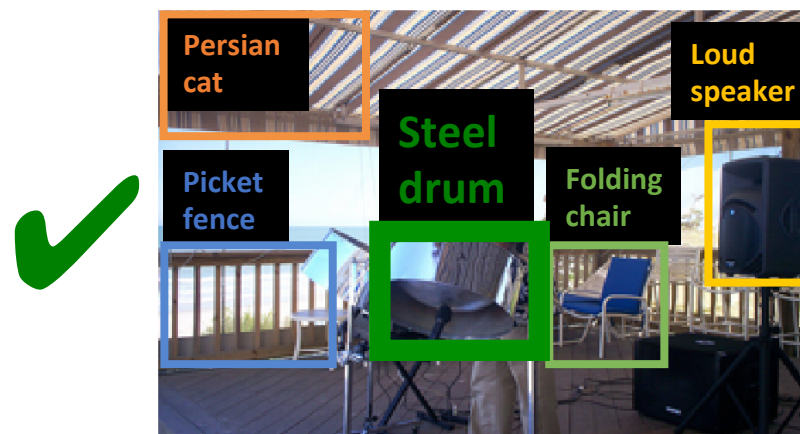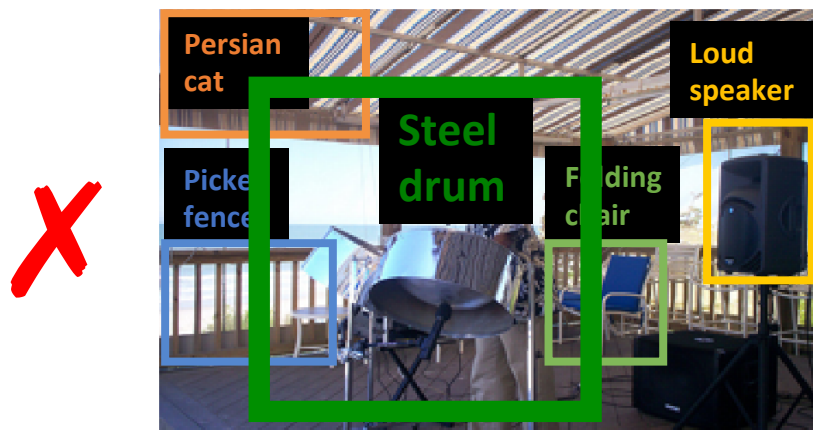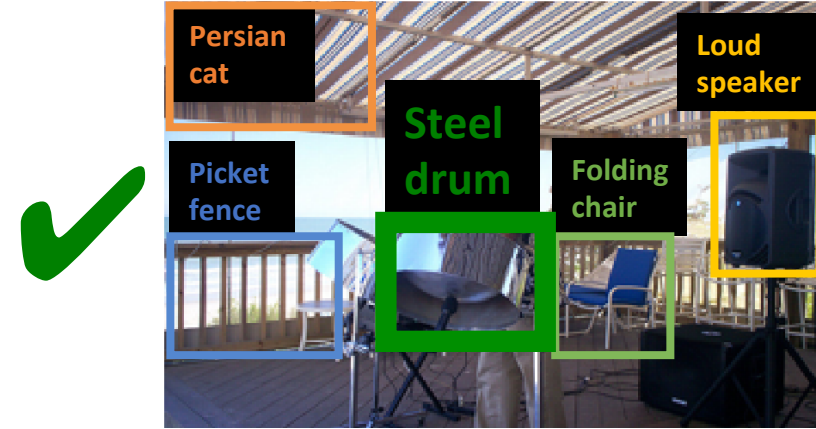
ILSVRC object localization (LOC) task

ILSVRC object localization (LOC) task

Steel drum

Output

$$\text{Error} = \frac{1}{100{,}000} \sum_{100{,}000 \text{ images}} 1[\text{incorrect on image i}]$$

ILSVRC2016 LOC results – with "provided" data

Team Name	Error (%)
Trimps-Soushen	7.71
Hikvision	8.74
NUIST	9.06
CU-DeepLink	9.89
KAISTNIA_ETRI	9.93

Trimps-Soushen:
Jie Shao, Xiaoteng Zhang, Zhengyan Ding, Yixin Zhao, Yanjun Chen, Jianying Zhou, Wenfei Wang, Lin Mei, Chuanping Hu
The Third Research Institute of the Ministry of Public Security, P.R. China.

Hikvision:
Qiaoyong Zhong*, Chao Li, Yingying Zhang(#), Haiming Sun*, Shicai Yang*, Di Xie, Shiliang Pu
(* indicates equal contribution)
Hikvision Research Institute
(#)ShanghaiTech University, is done at HRI

ILSVRC2016 CLS results – with "provided" data

Team Name	Error (%)
Trimps-Soushen	2.99
ResNeXt	3.03
CU-DeepLink	3.04
SamExynos	3.17
KAISTNIA_ETRI	3.26

Trimps-Soushen:
Jie Shao, Xiaoteng Zhang, Zhengyan Ding, Yixin Zhao, Yanjun Chen, Jianying Zhou, Wenfei Wang, Lin Mei, Chuanping Hu
The Third Research Institute of the Ministry of Public Security, P.R. China.

ResNeXt:
Saining Xie, UCSD
Ross Girshick, FAIR
Piotr Dollar, FAIR
Kaiming He, FAIR

ILSVRC2016 LOC results – with "external" data

Team Name	Error (%)
Trimps-Soushen	7.74
NUIST	9.50

Trimps-Soushen:
Jie Shao, Xiaoteng Zhang, Zhengyan Ding, Yixin Zhao, Yanjun Chen, Jianying Zhou, Wenfei Wang, Lin Mei, Chuanping Hu
The Third Research Institute of the Ministry of Public Security, P.R. China.

NUIST:
Jing Yang, Hui Shuai, Zhengbo Yu, Rongrong Fan, Qiang Ma, Qingshan Liu, Jiankang Deng

ILSVRC2016 CLS results – with "external" data

Team Name	Error (%)
Trimps-Soushen	2.99
NUIST	3.88

Trimps-Soushen:
Jie Shao, Xiaoteng Zhang, Zhengyan Ding, Yixin Zhao, Yanjun Chen, Jianying Zhou, Wenfei Wang, Lin Mei, Chuanping Hu
The Third Research Institute of the Ministry of Public Security, P.R. China.

NUIST:
Jing Yang, Hui Shuai, Zhengbo Yu, Rongrong Fan, Qiang Ma, Qingshan Liu, Jiankang Deng

Object localization (LOC)

Winner with "provided" and "external" data

Trimps-Soushen:
Jie Shao, Xiaoteng Zhang,
Zhengyan Ding, Yixin Zhao,
Yanjun Chen, Jianying Zhou,
Wenfei Wang, Lin Mei,
Chuanping Hu

The Third Research Institute of
the Ministry of Public Security,
P.R. China.