MIT CSAIL

Federated Visual Classification with Real-World Data Distribution

Tzu-Ming Harry Hsu, Hang Qi, Matthew Brown

ECCV 2020 #994

CIFAR 10/100	synthesized clients	low resolution	<1000 classes	
EMNIST	natural clients	low resolution	<1000 classes	
CelebA	not actual clients	large scale	high resolution	<1000 classes

iNaturalist-User-120k
& iNaturalist-Geo

natural clients | large scale | high resolution | >1000 classes

120k images
9275 clients
1203 classes

Landmarks-User-160k

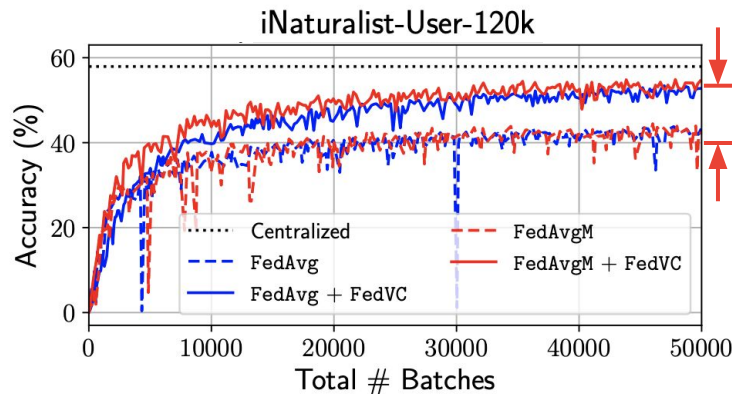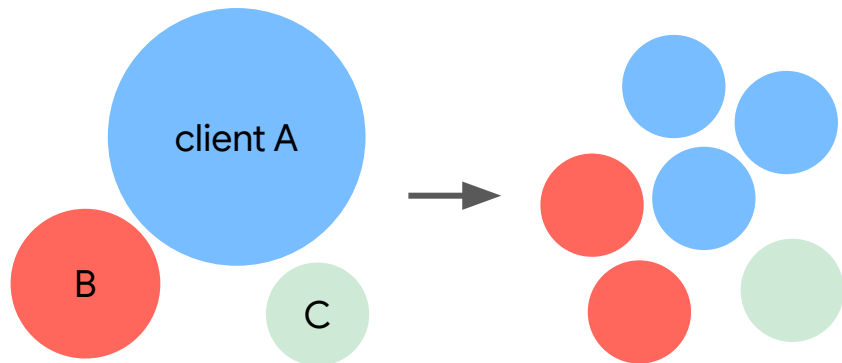natural clients | large scale | high resolution | >1000 classes

160k images
1262 clients
2028 classes

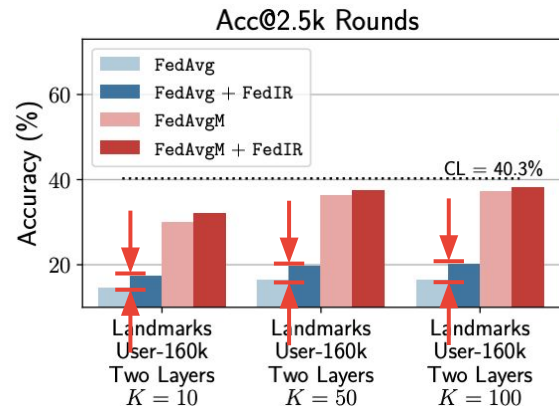# FedVC: Splitting Imbalanced Clients with **Virtual Clients**

FedIR: Importance Reweighted Client Objectives

$$\mathbb{E}_{p}\left[\ell(x,y)\right] = \mathbb{E}_{q_k}\left[\ell(x,y)\frac{p(x,y)}{q_k(x,y)}\right]$$

target distribution

client's distribution

Thank You

tinyurl.com/federated-vision-datasets