Reasoning about “privacy” in ML (2)

Prior work ~ inferring class representatives

Model Inversion [Fredrikson et al. CCS'15] and GAN attacks [Hitaji et al. CCS'17] infer properties of an entire class

E.g.: given a gender classifier, infer what a male looks like

In our work:

Infer properties of a subset of the training inputs but not of the whole class

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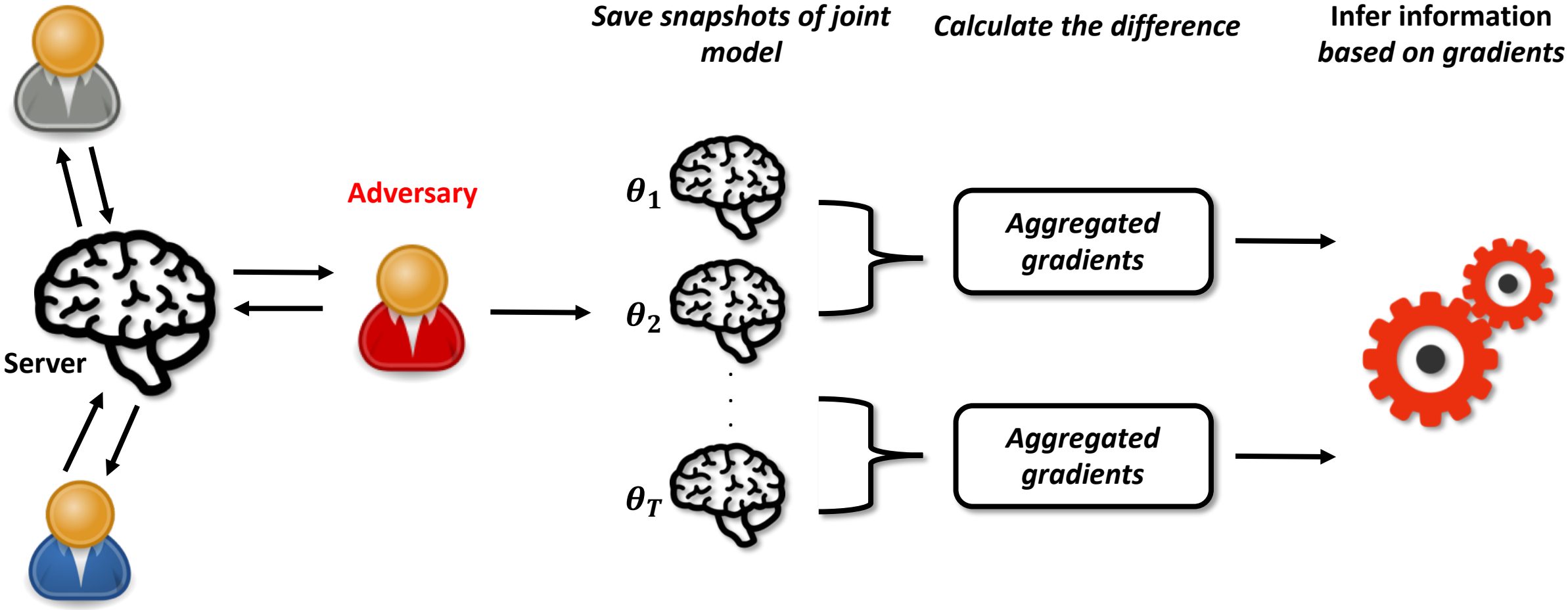
Passive Property Inference Attack



Luca Melis, Congzheng Song, Emiliano De Cristofaro, Vitaly Shmatikov. Inference Attacks Against Collaborative Learning. Under Submission.