Adversarial poisoning against deep networks

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Despite adversarial example is now a well known phenomenons [3], data poisoning has received much less attention. In data poisoning, the hacker does not modify training image but testing image (see figure 1).

![Classical Adversarial Attack and Data Poisoning](image)

Figure 1: Illustrations of classical adversarial attack and poisoning attack: in both case the red point is a testing sample that should be classifier as orange, and, the goal of attacks is to have it classified as green either by modifying testing or training data.

Pioneer works like [2] has offered poisoning attack against deep network. But these attack has focused on large data modification (including label modification). Recently, [1] offers an invisible poisoning based on adversarial example phenomenon. At the end of the attack, nobody can detect it even with a careful review of the training data. Yet, [1] only tackles deep feature + SVM.

In this short paper, we show that [1] attack can be extended to deep network. Two extensions are offered: based on GAN like method or based on better energetic landscape perturbation than in [1] (extended paper in hal.archives-ouvertes.fr/hal-02139074v2).

References

