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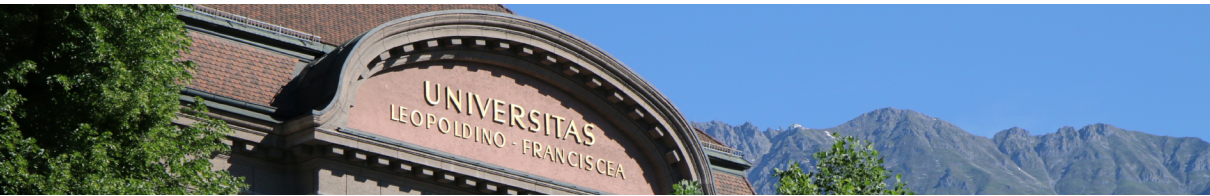

Adversarial Label Flips

Matthias Dellago & Maximilian Samsinger

Introduction/Reminder from last time

Panda slide from last time

Introduction/Reminder from last time

What do we want to do?

Generate adversarial examples.
Create confusion matrix

Confusion matrix

Confusion matrix from last presentation

Adversarial examples + some attacks

Block

Adversarial examples have been introduced in [1].

Examples of attacks: FGSM + PGD

FGSM has been introduced in [2]. (Panda example)
An iterated version (PGD) was introduced in [3].

How does FGSM work?

FGSM

text

How does FGSM work?

FGSM

text

For more attacks we use Foolbox.

What is Foolbox?

Foolbox

A suit of attacks is available with FoolBox! [4]. Maybe show the full list of attacks directly on the website. `https://foolbox.readthedocs.io/en/stable/modules/attacks.html`

Implementation

Foolbox can be used with PyTorch, TensorFlow and JAX. We arbitrarily choose Pytorch!

Optional Slide 1: Data set

Some images for MNIST, Fashion-MNIST and CIFAR-10.

Optional Slide 2: Convolutional neural networks

We use small convolutional neural networks [5] for the "easy" data sets. For CIFAR-10 we will use ResNet-18, a residual neural network [6], [7].

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