Deep Learning Lab

Assignment 3

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Overview

Task: Training convolution NN on CIFAR-10

➔ Without augmentation

➔ With augmentation

➔ Here: for every image randomly chosen

 ◆ Zoom

 ◆ Elastic Deformation

 ◆ Rotation

Architecture (best result)

Topology:

1. Conv. Layer, 32 features, 5x5 filter, ReLu
2. Pooling
3. Conv. Layer, 32 features, 5x5 filter, ReLu
4. Pooling
5. Conv. Layer, 64 features, 5x5 filter, ReLu
6. Flatten Layer
7. Fully Connected Layer, 64 units, ReLu
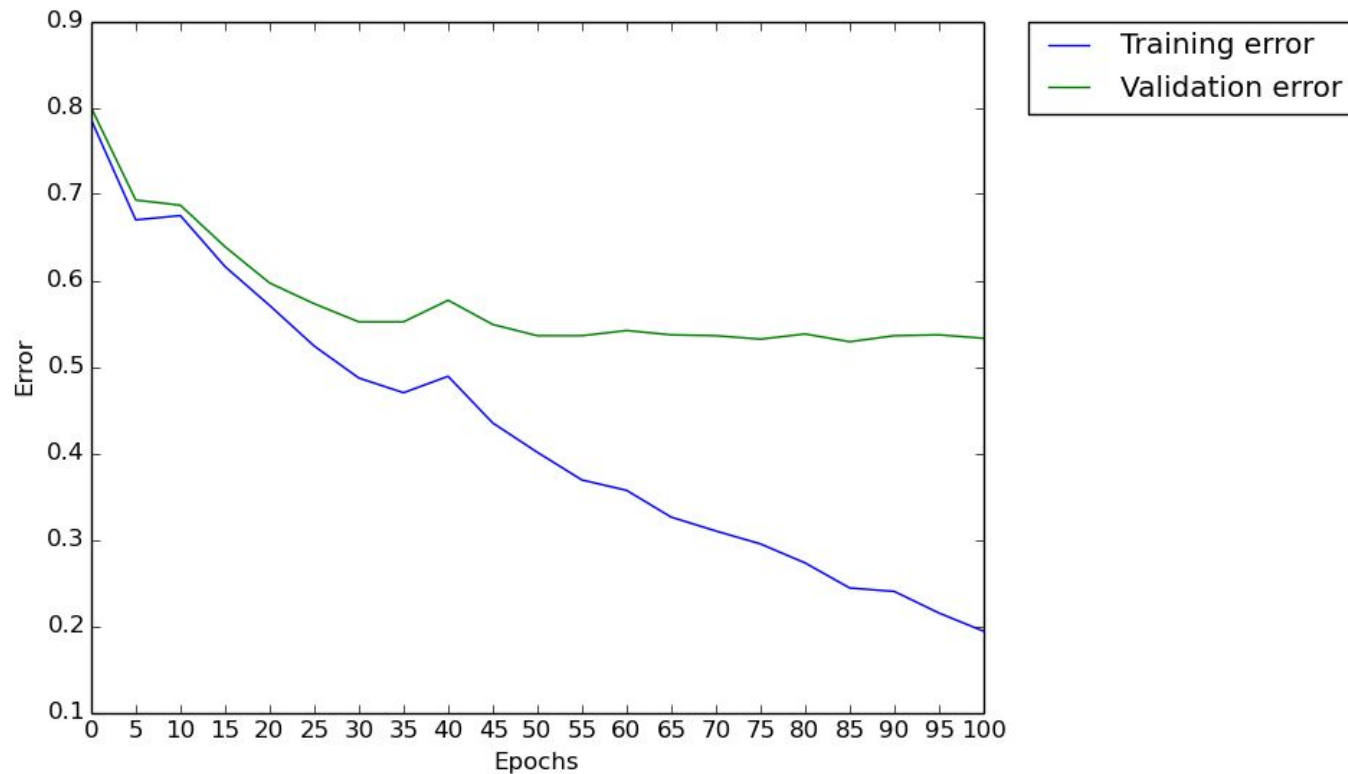8. Fully Connected Layer, 10 units, linear activation
9. Softmax Output

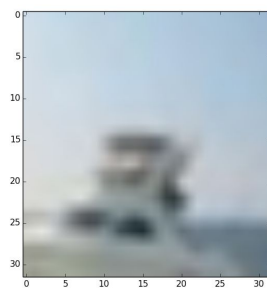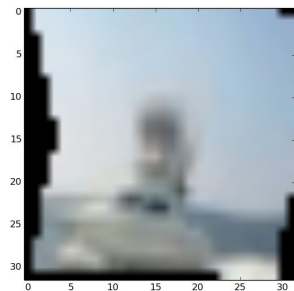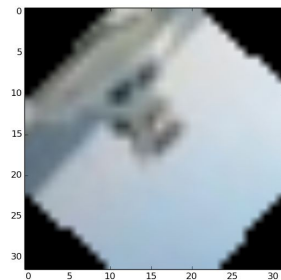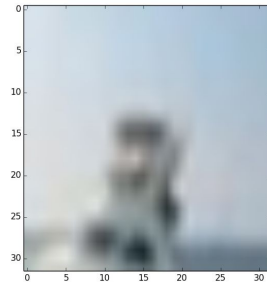# Architecture (best result)
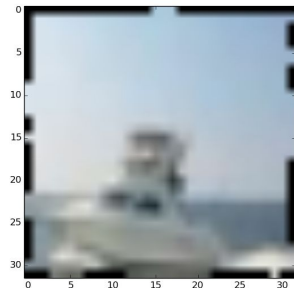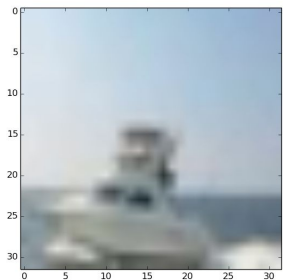
Training parameters:

- Epochs: 100
- Batch size: 128
- Learning rate: 0.01

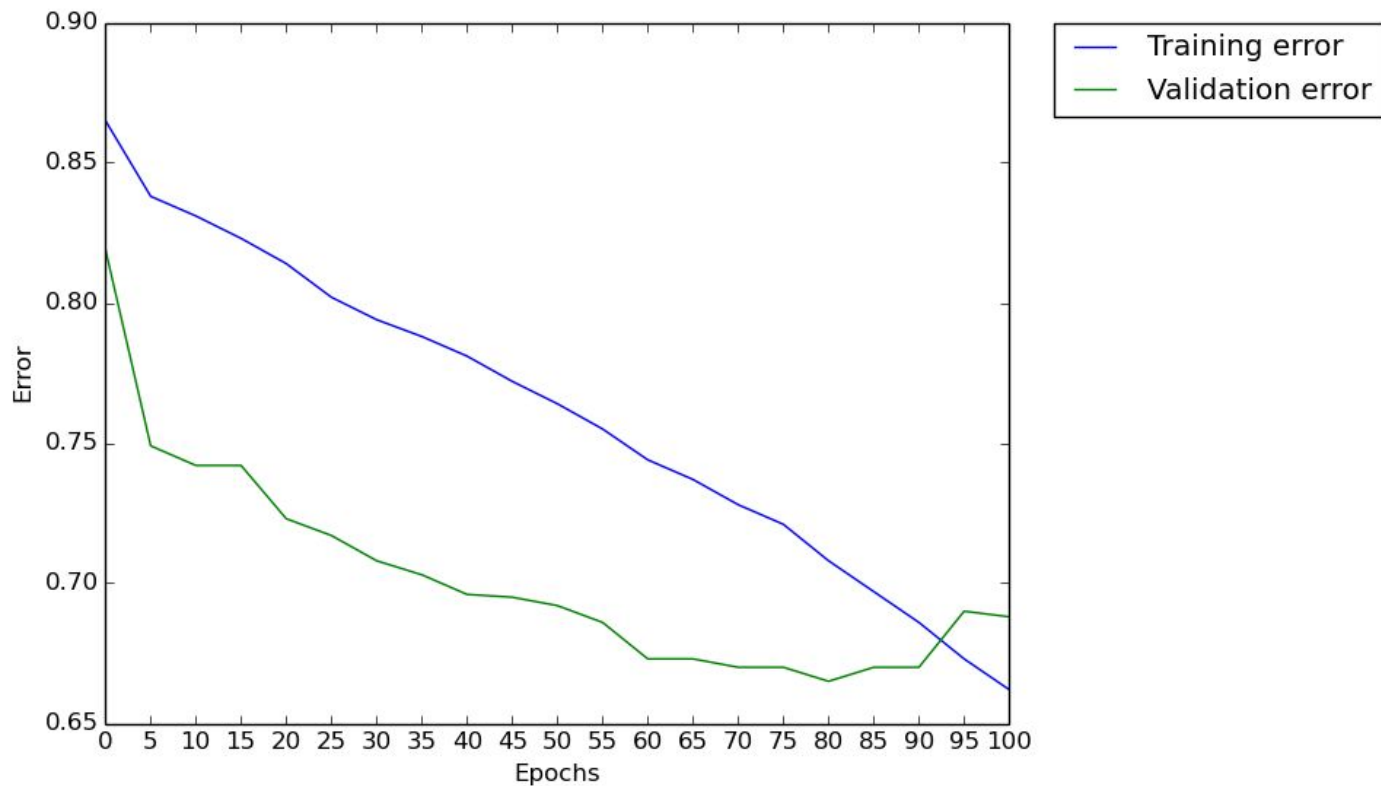Convolution NN implementation based on Tobi's solution of exercise 2.

Results without augmentation

Augmenting Images

Results with augmentation

Challenges

- Finding a good architecture
- Using augmentations lead to worse results
- Running time
- Crashes during training