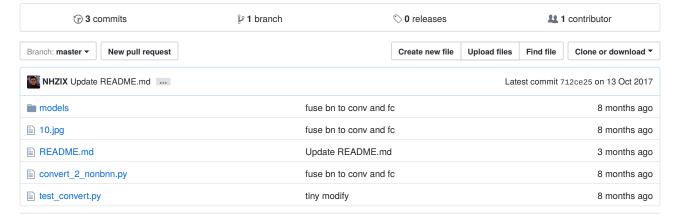
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### NHZIX / Merge bn Caffe

Merge Batch Normalization in caffe



#### README.md

# Merge Batch Normalization in caffe

This implementation is about a fusion of batch normalization with convolution or fully connected layers in CNN of Caffe.

## Introduction

Caffe uses two layers to implement bn:

```
layer {
 name: "conv1-bn"
  type: "BatchNorm"
  bottom: "conv1"
  top: "conv1"
  param {
   lr_mult: 0
   decay_mult: 0
  param {
   lr_mult: 0
    decay_mult: 0
  param {
   lr_mult: 0
    decay_mult: 0
  batch_norm_param {
   moving_average_fraction: 0.99
    eps: 1e-8
  }
layer {
 name: "conv1-bn-scale"
  type: "Scale"
  bottom: "conv1"
```

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```
top: "conv1"
param {
  lr_mult: 1
  decay_mult: 0
param {
  lr_mult: 1
  decay_mult: 1
scale_param {
  axis: 1
  num_axes: 1
  filler {
  type: "constant"
    value: 1
  bias_term: true
  bias_filler {
    type: "constant"
    value: 0
  }
}
```

When a model training is finished, both batch norm and scale layer learn their own parameters, these parameters are fixed during inference. So, we can merget it with the convolution or fully connected layer.

For MORE details about batch normalization , see here

## Demo

#### Note:

RUN python convert\_2\_nonbnn.py to convert the normal network to the one without bn.

RUN python test\_convert.py to test the demo network.

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