Kirill Kliavin

TensorFlow deep NN

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A high-level tutorial into Deep Learning using MNIST data and TensorFlow library.

by @kakauandme (https://twitter.com/KaKaUandME) and @thekoshkina (https://twitter.com/thekoshkina)

Accuracy: 0.99

Prerequisites: fundamental coding skills, a bit of linear algebra, especially matrix operations and perhaps understanding how images are stored in computer memory. To start with machine learning, we suggest coursera course (https://www.coursera.org/learn/machine-learning) by Andrew Ng.

Note:

Feel free to fork and adjust CONSTANTS *to tweak network behaviour and explore how it changes algorithm performance and accuracy. Besides* ***TensorFlow graph*** *section can also be modified for learning purposes.*

It is highly recommended printing every variable that isn't 100% clear for you. Also, tensorboard (https://www.tensorflow.org/versions/master/how_tos/summaries_and_tensorboard/index.html) can be used on a local environment for visualisation and debugging.

Libraries and settings

In [1]:
```
import numpy as np
import pandas as pd

%matplotlib inline
import matplotlib.pyplot as plt
import matplotlib.cm as cm

import tensorflow as tf

# settings
LEARNING_RATE = 1e-4
# set to 20000 on local environment to get 0.99 accu
racy
TRAINING_ITERATIONS = 2500

DROPOUT = 0.5
BATCH_SIZE = 50

# set to 0 to train on all available data
VALIDATION_SIZE = 2000

# image number to output
```