Deep Learning
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Exercises #2

For submission either use the collect_submission.sh script or make sure you zip all required files manually. The generated zip file can then be submitted to the sciebo dropoff folder for the exercises. The link will be available on the ILIAS page.

1. **Support vector machine**
   Open the *svm.ipynb* notebook and follow the instructions inside. In this exercise you will:

   - implement a fully-vectorized loss function for the SVM
   - implement the fully-vectorized expression for its analytic gradient
   - check your implementation with the numerical gradient
   - use a validation set to tune the learning rate and regularization strength
   - optimize the loss function with SGD
   - visualize the learned weights

   50 points

2. **Softmax classifier**
   Open the *softmax.ipynb* notebook and follow the instructions inside. In this exercise you will:

   - implement a fully-vectorized loss function for the Softmax classifier
   - implement the fully-vectorized expression for its analytic gradient
   - check your implementation with the numerical gradient
   - use a validation set to tune the learning rate and regularization strength
   - optimize the loss function with SGD
   - visualize the learned weights

   50 points