

Linear Regression

1. Download AwA2 dataset from <https://cvml.ist.ac.at/AwA2/>. This dataset consists of 37322 images of 50 animal classes with pre-extracted deep learning features for each image. Construct the training set and test set by splitting the images in each class into 60% for training and 40% for testing.
2. Train ordinary linear regression model for multi-class classification. Then, add two types of regularizers: L2 (ridge regression) and L1 (lasso regression). Tune the hyper-parameter before the regularizer. Use multi-class classification accuracy as the evaluation metric.
3. Compare the training/test accuracy of ordinary/ridge/lasso regression model with different hyper-parameter values.
4. Download the latex template and write an experiment report in English. The report should contain the experimental setting, results, observation, and conclusion.