Assignment #4
CS510 Spring 2013
"Complex Object Recognition"
Report Due Friday, May 10th

Introduction

In Assignment #3, you collected a set of low-level features detectors (points, regions, etc.). In Assignment #4, you will combine those features with what you have learned about classifiers into a system for recognizing complex objects. I strongly recommend that you adopt either a Bag of Features or Constellation strategy.

More specifically, every image will contain one of four object classes: airplane, automobile, spotted cat (i.e. leopard or cheetah) or zebra. The objects are shown from many views and in complex contexts. As in Assignment #2, there are two sets of images. There is a training set that is "fair game". In other words, you can look at these and analyze them in any way you want, including training over them. There is a test set that you should not look at until you test the final version of your system on it. There are 100 images of each of the four object types in both the training and test sets. The filenames specify the ground truth label (but test set file names may not be used by your system)

The Report

As before, the final product you produce is a report. The report should contain performance results for your system on the test images, including a confusion matrix. It should describe your system, explain/justify why you designed it the way you did, and analyze its strengths and weaknesses.

Submission

Submit your assignment by emailing it to me (draper@cs.colostate.edu). Send me an email with Assignment #4 in the heading and attach your report to it. The report is due Friday, May 10th. This is the last day of classes, so do not expect an extension. Of course there are always exceptions for unforeseen emergencies (e.g. death of the family member, severe illness, etc.), in which case see the instructor.

Hints

Start early. This assignment is a challenge. Do not expect to get 100% of the test images correct.