Homework 3

Image Classification: Core50 Data Set

Core 50 Data Set

- 10 object classes
- 5 instances of each class
- 11 conditions
  - Different backgrounds
- 300 movie frames

Classification Problem

Goal: construct a classifier that can distinguish between these object classes, even for **unseen instances**

- Train using 3 of instances of each class (but with all backgrounds and movie frames)
- Validate using a distinct instance
- Test using yet another instance

Data Organization

HW 3: we will just focus on 4 object classes

- One fold will contain one instance of each of the 4 classes (all backgrounds and movie frames)
- This gives us a total of 5 folds that are statistically independent of one-another

One Model

One rotation of the folds:

- Use 3 folds for training
- 1 fold for validation
- 1 fold for testing

Data Handling Challenge

- Fetching all images from spinning disk, transforming each and caching into folds costs a lot of time (~30 minutes)
- We will instead store each fold in a TF.Record (a small number of files)
  - Fetching this small group of really large files is much less expensive than fetching the images individually
  - Can reduce the fetch time to ~5 minutes