

## Exercise on Domain Adaptation

Consider the two algorithms for domain adaptation Ad-REM and CORAL explained in class. Consider the transfer tasks of the Office-caltech dataset available at <https://twanvl.nl/research/domain-adaptation-2017/>.

1. Apply CORAL and Ad-REM
  - (a) with VGG features and
  - (b) with SURF features.
2. Report and discuss the results.
3. Analyze how the use of labelled target data affects the target accuracy. Modify CORAL and Ad-REM to the setting where a subset of the target data is labelled.
  - (a) Select randomly  $x = 10\%$  labelled target data for each class.
  - (b) Apply your modified CORAL and Ad-REM to the adaptation tasks with partly labelled target data.
  - (c) Repeat the experiment 5 times and report average accuracy results and standard deviations.
  - (d) Repeat the above three steps for  $x = 10, 20, 40, 60\%$ .
  - (e) Report the results in a table and/or in a plot.
  - (f) Discuss the results.

You can use the implementations of CORAL and Ad-REM available at <https://github.com/twanvl/adrem>.