

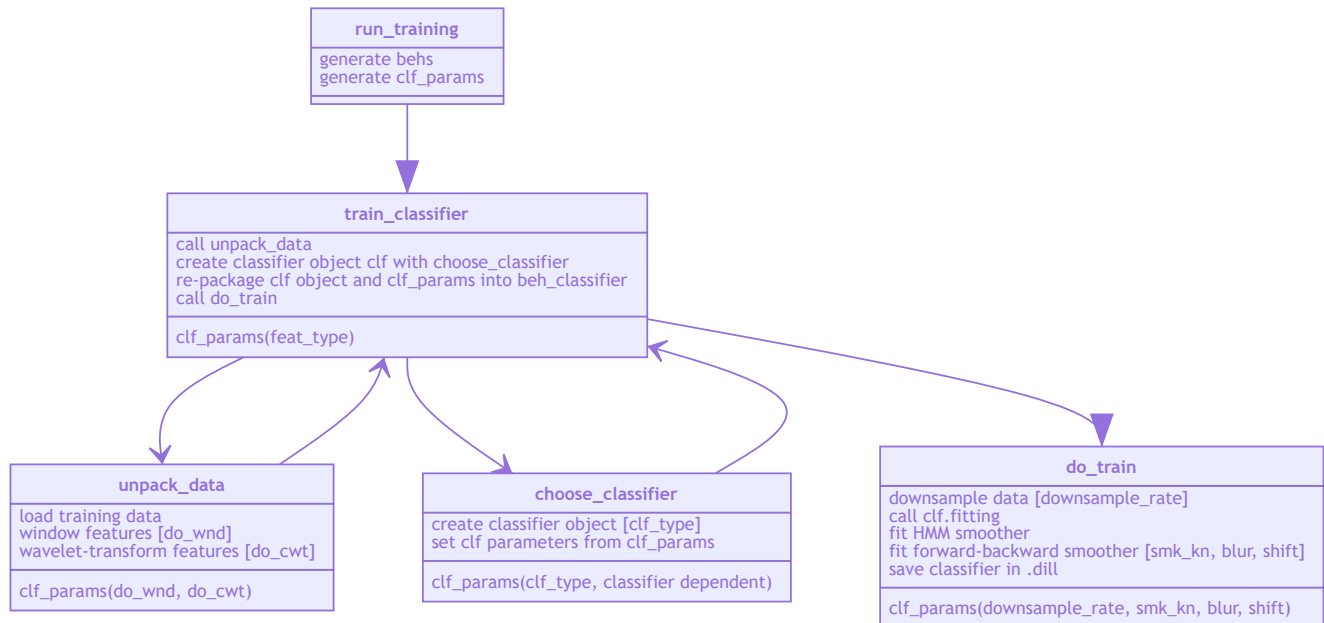
Training a classifier in MARS

The heart of a training job is the line

```
python run_training.py sniff_face both > test_output/mars_log.txt
```

which calls `run_training` with inputs `sniff_face` (the behavior to learn) and `both` (ie run both training and testing); any text generated by python to `test_output/mars_log.txt`.

Here's a poorly made diagram showing what steps happen in each function, and what values in `clf_params` are used in that function:



Steps performed in `run_training`:

Creating a dictionary of behavior labels

`behs` is a **dict** with one key, for the behavior label to learn; `behs.(key name)` is a list of all the things that behavior might be called in the data. This string array is something we hand-wrote to account for the fact that different people sometimes use a slightly different name for the same behavior.

Note: `run_training` only trains one classifier at a time, by design: this lets you speed things up by running multiple training jobs at the same time on the cluster. Do this by duplicating your training job in the Jobs Composer and modifying the associated shell script.

If you want to change to training a multi-class classifier, you'll want to modify `run_training` appropriately and train all classes in a single job.

Setting classifier parameters

`clf_params` is a **dict** of parameters that determine how data will be pre-processed, what classifier will be trained, and how parameters of that classifier will be set.

Any parameters not set here will be put to default values (which you can see by examining the dict returned by `load_default_parameters()` in `MARS_train_test.py`.)

Calling train/test/run wrappers

Namely `train_classifier`, `test_classifier`, and `run_classifier`.

Test and run are slightly different- `test` will return precision/recall for the classifier on the test set, while `run` will create the actual `*.annot` annotation files for each video in the test set (in case you want to visually inspect the annotations themselves, and compare them to the ground truth.)