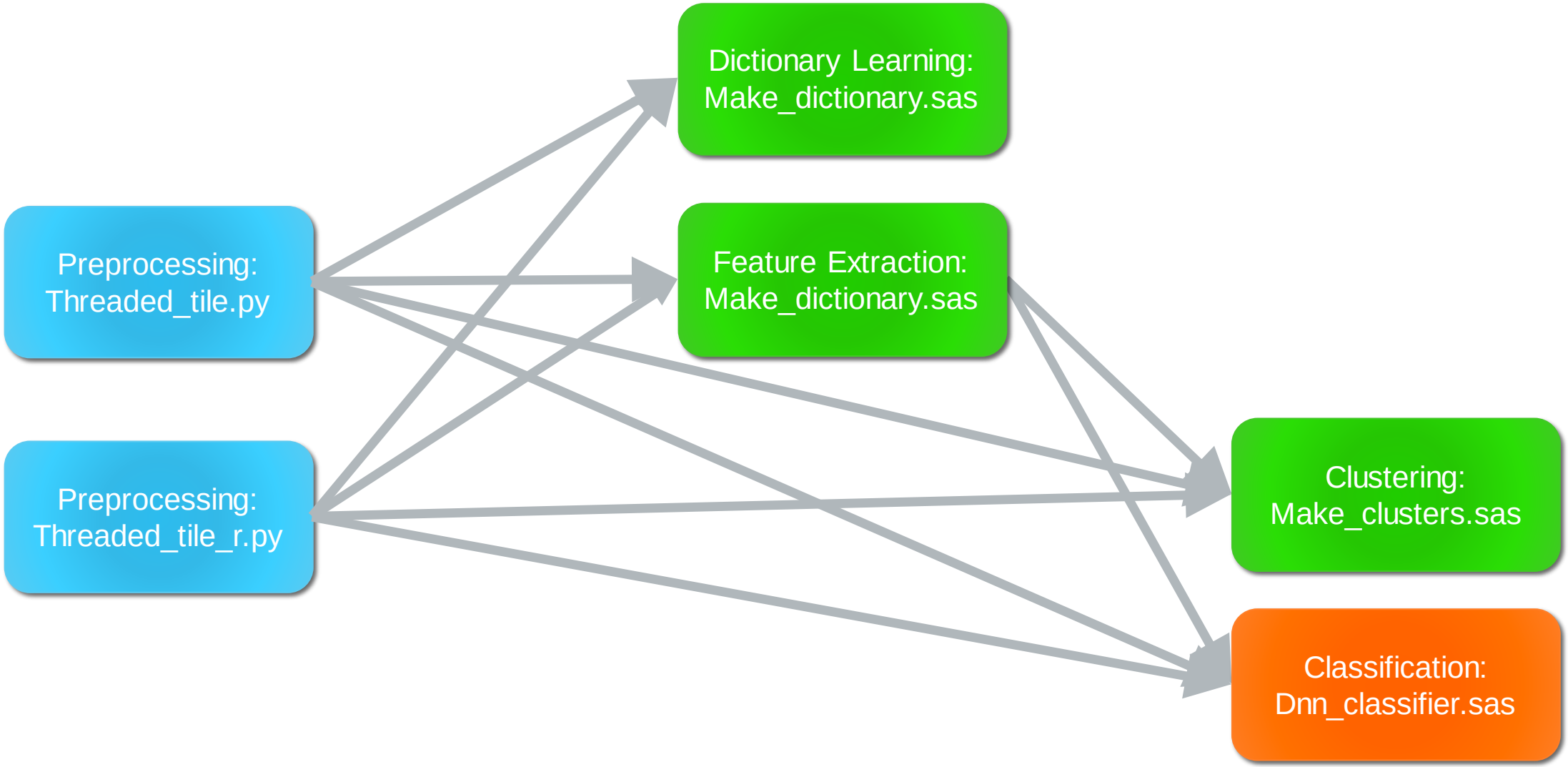
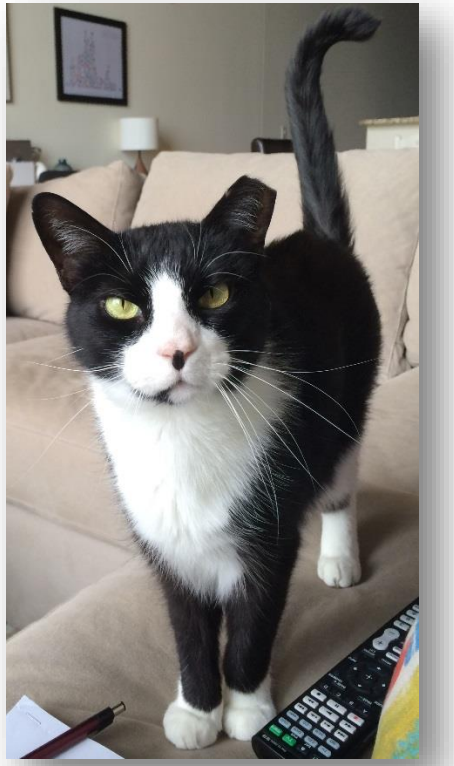
Suggested usage patterns



Theaded_tile.py creates uniform square patches

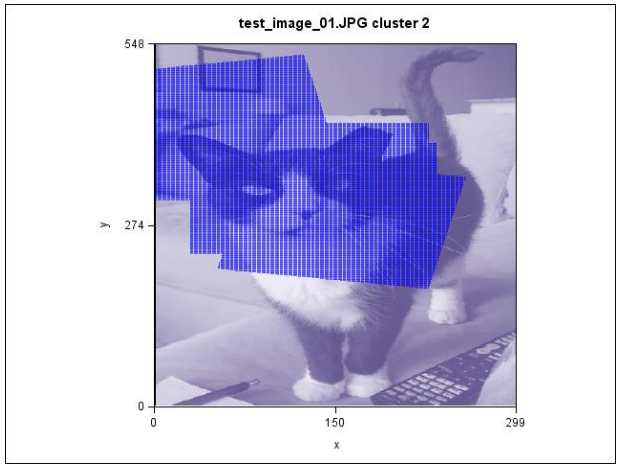
```
> python threaded_tile.py -i cat_test_in -o test_out  -t 100 -g True
```

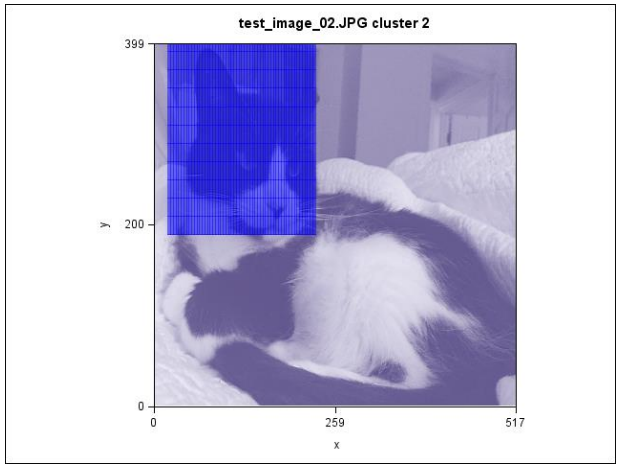
Theaded_tile_r.py creates randomly sized and rotated square patches



```
> python threaded_tile_r.py -i cat_test_in -o test_out_r -v 50 -g True
```

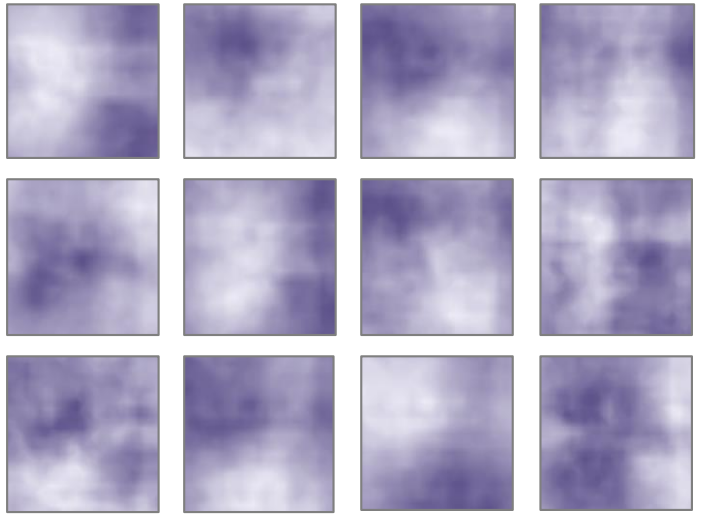
Make_clusters.sas creates clusters of similar patches in the input images






```
%let OUT_DIR = /path/to/test_out_r;
```

Make_dictionary.sas creates a dictionary of representative images and a compressed feature space



VIEWTABLE: L.Hidden_output

	orig_name	x	y	size	angle	Hidden: h3=1	Hidden: h3=2
1	test_image_01.JPG	154	0	1318	0	5.1935916443	-7.843833235
2	test_image_01.JPG	308	0	1228	0	1.7825621274	-3.305747061
3	test_image_01.JPG	144	0	1396	0	5.1935916443	-7.843833235
4	test_image_01.JPG	358	77	1182	0	3.0170348192	-3.931366527
5	test_image_01.JPG	0	154	1398	0	-17.34818459	15.701758468

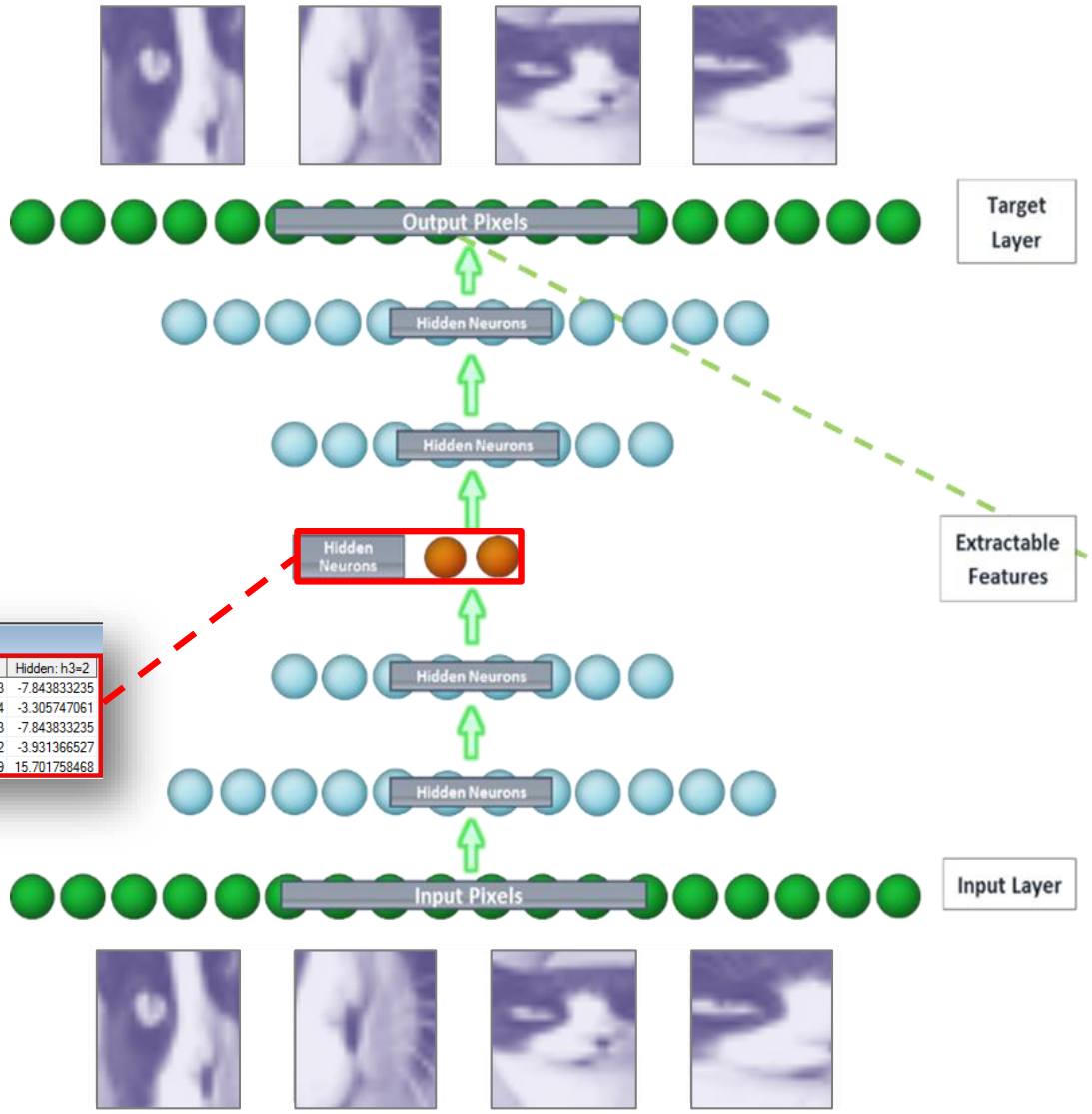
```
%let OUT_DIR = /path/to/test_out_r;
```

Make_dictionary.sas uses a stacked autoencoder neural network

A compressed feature space is created by the output of the middle hidden layer – the compressed feature space can be used in subsequent learning tasks

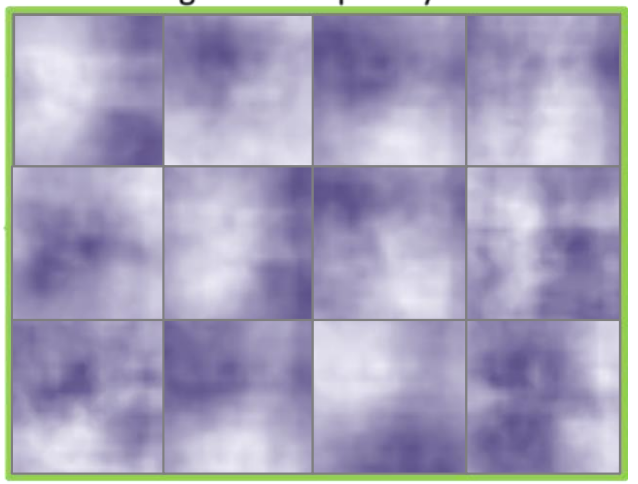
VIEWTABLE: L.Hidden_output

	orig_name	x	y	size	angle	Hidden: h3=1	Hidden: h3=2
1	test_image_01.JPG	154	0	1318	0	5.1935916443	-7.843833235
2	test_image_01.JPG	308	0	1228	0	1.7825621274	-3.305747061
3	test_image_01.JPG	144	0	1396	0	5.1935916443	-7.843833235
4	test_image_01.JPG	358	77	1182	0	3.0170348192	-3.931366527
5	test_image_01.JPG	0	154	1398	0	-17.34818459	15.701758468

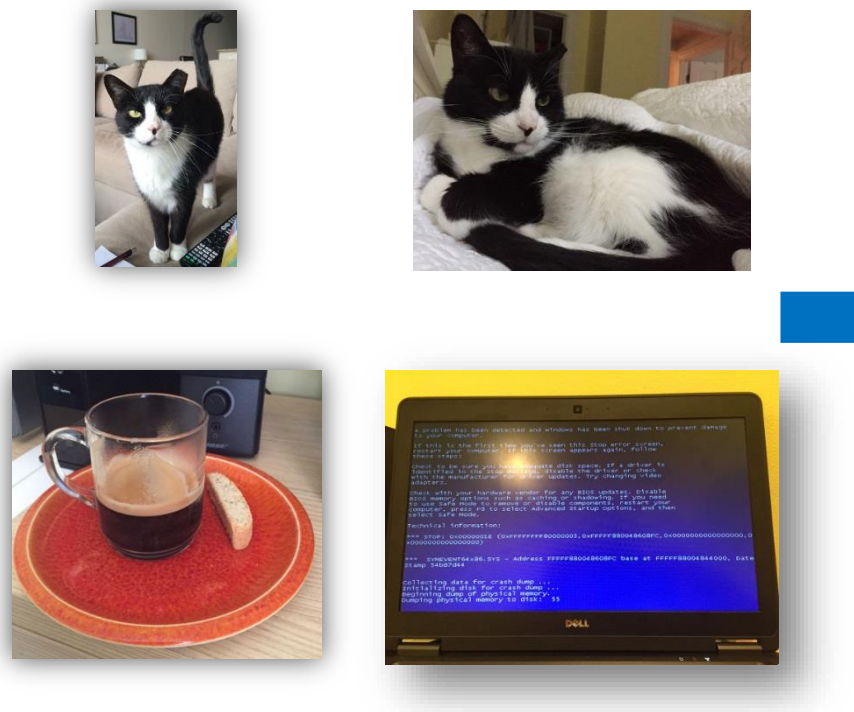


A dictionary of representative images is created by the weights of the top hidden layer – the dictionary can be used to summarize many images

Weights of output layer

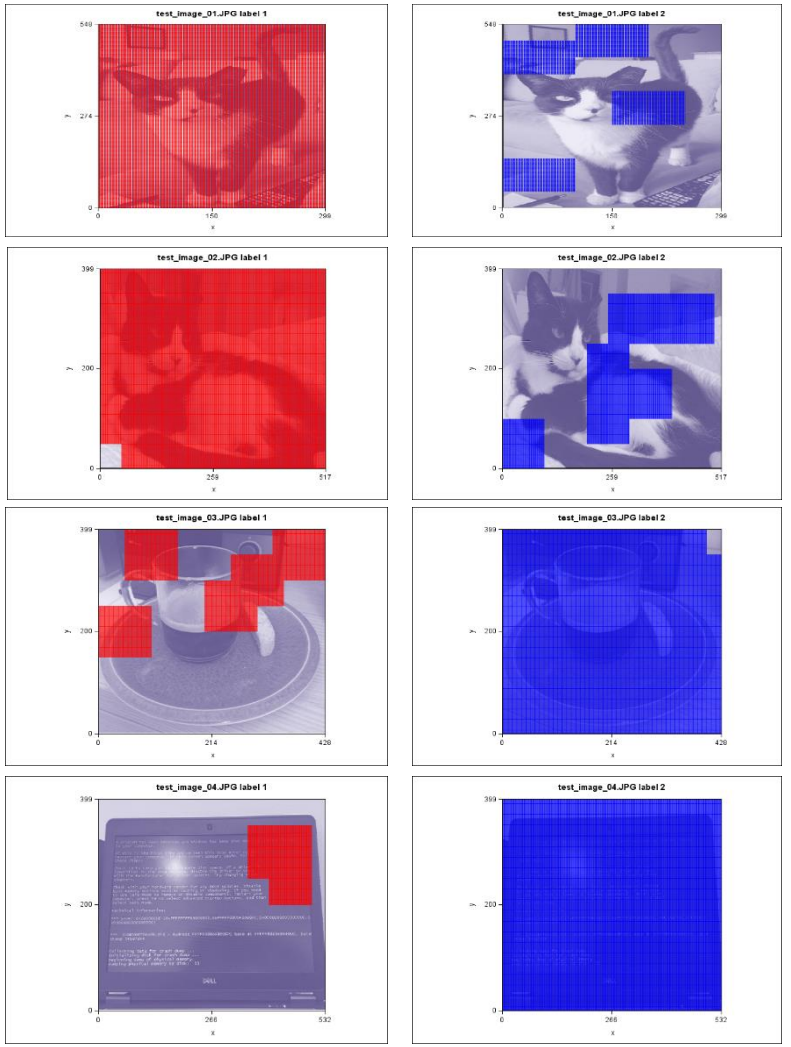


Dnn_classifier.sas



```
> python threaded_tile.py -i all_test_in -o test_out  -t 100 -g True
```

Dnn_classifier.sas




```
%let OUT_DIR = /path/to/test_out;
%let LABEL_FILE = /path/to/labels.csv
```

Cat Patches

Not Cat Patches