Final Presentation

Jazz Garcha

Problem

- Build an image classifier that return which presidents image was uploaded

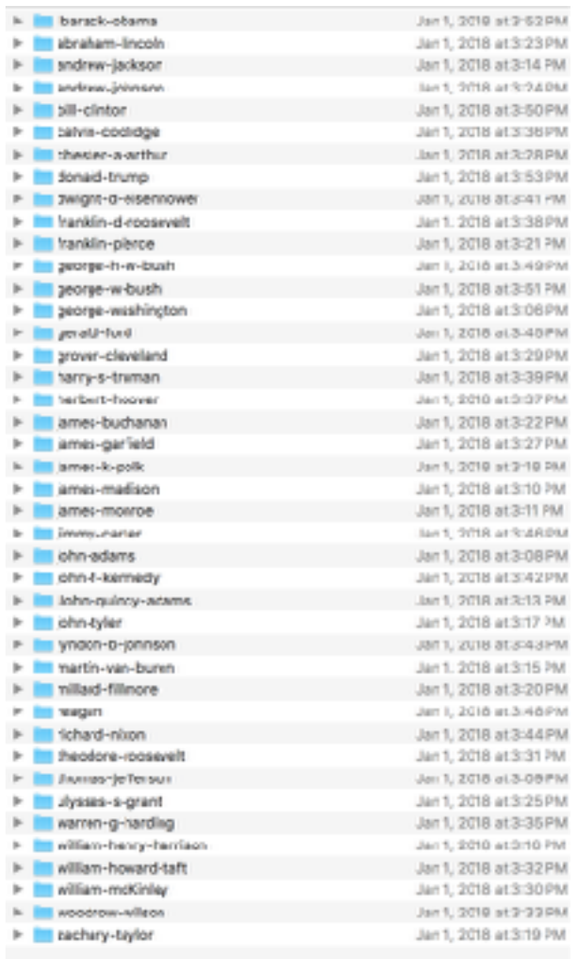
Solution

- OpenFace
- https://cmusatyalab.github.io/openface/
- open source implementation with deep neural networks trained with millions of images

how does it work

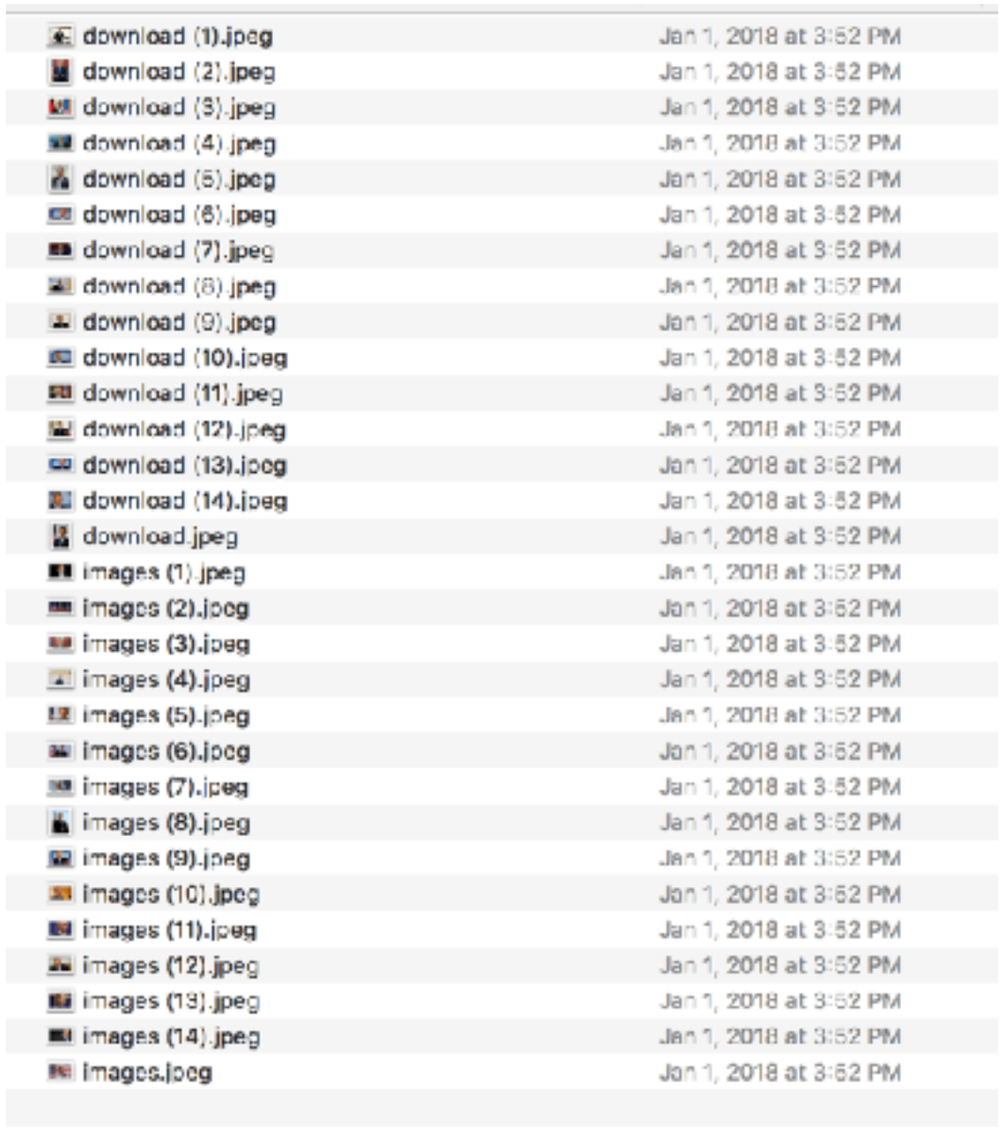
- OpenFace is available as docker image

- Make folders with Training-images



how does it work

- Must include multiple examples of the person



How does it work

- Detection and alignment of images

```
./util/align-dlib.py ./training-images/
align outerEyesAndNose ./aligned-images/ --size 96
```

- Generate alignment of images

```
./batch-represent/main.lua -outDir
./generated-embeddings/ -data ./aligned-images/
```

- Train face detection model

```
./demos/classifier.py train ./generated-embeddings/
```

Test it out

- Call the classifier with new image

```
./demos/classifier.py infer
./generated-embeddings/classifier.pkl bush.jpg
```

- Detected with 65% confidence.

```
=== /host/Users/jazz/Desktop/examples/bush.jpg ===
Predict george-h-w-bush with 0.65 confidence.
```

```
root@0735a9790131:~/openface# ./demos/classifier.py infer ./generated-embeddings/classifier.pkl /host/Users/jazz/Desktop/examples/bush.jpg
/root/.local/lib/python2.7/site-packages/sklearn/lda.py:4: DeprecationWarning: lda.LDA has been moved to discriminant_analysis.LinearDiscriminantAnalysis in 0.17 and will be removed in 0.19
  "in 0.17 and will be removed in 0.19", DeprecationWarning)

=== /host/Users/jazz/Desktop/examples/bush.jpg ===
Predict george-h-w-bush with 0.65 confidence.
root@0735a9790131:~/openface#
```

Sources

- Followed the following tutorial: https://medium.com/@ageitgey/machine-learning-is-fun-part-4-modern-face-recognition-with-deep-learning-c3cffc121d78
- Scrapped images from Google Images
- Docker Image: https://cloud.docker.com/swarm/blaze2236/repository/docker/blaze2236/ga-project/general