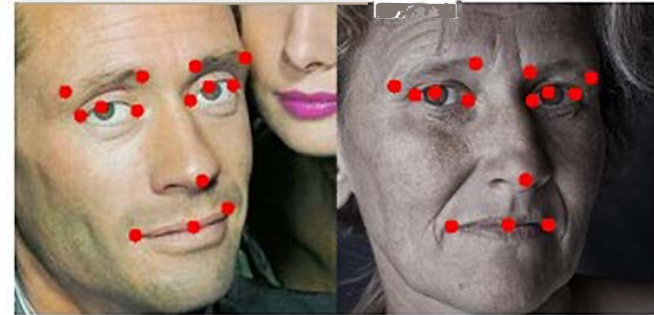


Project 4 - Feature Detection & Location

Attached is a database of faces (it is a zip archive split into files via 7-zip program). The task is to detect 14 features from the facial images

1. left eye center,
2. right eye center,
3. left eye inner corner,
4. left eye outer corner,
5. right eye inner corner,
6. right eye outer corner,
7. left eyebrow inner end,
8. left eyebrow outer end,
9. right eyebrow inner end,
10. right eyebrow outer end,
11. nose tip,
12. mouth left corner,
13. mouth right corner,
14. mouth center

The image below depicts 2 samples from the database with the features marked by a red circle for emphasis.



The location of the each feature is stored in a csv file.

Part 1: Preliminary Work:

- Download the database and unzip the files
- Investigate the data and report on:
 - Size of the database
 - Type of images (RGB or grayscale)
 - Size of images
 - Number of features.
 - The order of the features in the CSV file (what does each column represent).
- Write a function that can read all images into a single variable.
- Write a function that can read all point locations into a single variable.
- Normalize the data.

Part 2: CNN Architecture, Training & Testing:

Build a CNN to successfully detect the 14 features.

Report on your accuracy

Use keras for coding