Appendix D: MATLAB scripts

Calculating the luminance and contrast of images

%% Batch Luminance and stdev calculation for each target

clear all

cd 'C:\Users\…..'

pathname = 'C:\Users\………;

images = readImages(pathname,'jpg'); %(number of images)

dirData = dir('*.jpg'); % List filenames

for i = 1:length(images)

% create the templates/masks for figure-ground segmentation

% the masks are of the same size as the images and contain ones where the

% foreground is and zeros elsewhere

mask_face = separate(images{i},1);

% put the individual masks into a cell

mask = cell(3,1);

mask{i} = mask_face;

% obtain some image stats for the foreground of the original faces

% (mean luminance & standard deviation of the luminance distribution

% (contrast), as well as the luminance histograms)

face = images{i}

%f = dir('*');

%disp([images(i).name 'Luminance is'])

disp([dirData(i).name]) % display current filename in the loop (i)

```
%disp( [fileName.name])

disp( [ 'Luminance is'] )

mean2(face(mask{i}==1))

disp( [ 'Standard Dev is'] )

std2(face(mask{i}==1)); end
```

Choosing a random template composite from top 3 faces for each target

```
% Choose a random file name out of a folder using batch processing – matching unique
composite with target face.

cd 'C:\Users\......'

input_path = 'C:\Users\.......... ';

output_path = 'C:\Users\..............\';

Directories = dir;

for j=3:1:length(Directories);

    if Directories(j).isdir == 0, continue; end % if there are no directories, continue to end

    cd(input_path);

    cd(Directories(j).name);


        for dirData = dir('*.jpg'); % array of filenames matching

            m = size(dirData,1);

            cd(input_path);

            cd(Directories(j).name);

f = dir('*.jpg');

ridx = randi(numel(f));

disp( ['Chosen file is:' Directories(j).name  f(ridx).name] );

        end

end
```