CLAIMS

1. An identification (ID) document authentication method, comprising:

obtaining a plurality of labelled illuminated images, wherein each of the labelled illuminated images is an image of the ID document captured whilst a different coloured light is projected thereon, and tagged with a label corresponding to the different coloured light projected;

generating, using a softmax function of a trained classifier model, a confidence score associated with the plurality of labelled illuminated images, wherein the plurality of labelled illuminated images is a consolidated input to the trained classifier model; and

authenticating the ID document based on a comparison between the confidence score and a threshold, wherein the threshold corresponds to a pre-determined false acceptance rate.

2. The method as claimed in claim 1, wherein the trained classifier model comprises a plurality of kernels with each kernel corresponding to a feature of an image of a genuine ID document captured whilst a coloured light is projected thereon.

3. The method as claimed in any one of the preceding claims, wherein the plurality of labelled illuminated images comprises three labelled illuminated images, and wherein:

a first labelled illuminated image is a first image of the ID document projected with a first coloured light;

a second labelled illuminated image is a second image of the ID document projected with a second coloured light; and

a third labelled illuminated image is a third image of the ID document projected with a third coloured light.

4. The method as claimed in claim 3, wherein the first coloured light is red light, the second coloured light is green light, and the third coloured light is blue light, and wherein the first coloured light, the second coloured light and the third coloured light are projected onto the ID document in any order.

5. The method as claimed in any one of the preceding claims, further comprising performing image processing on the plurality of labelled illuminated images to remove background images from the plurality of labelled illuminated images.

6. The method as claimed in any one of the preceding claims, wherein the threshold is determined based on a receiver operating characteristic curve, and wherein authenticating the ID document comprises authenticating the ID document on a condition that the confidence score is lower than the threshold.

7. An identification (ID) document authentication system, comprising:

an image obtaining device to obtain a plurality of labelled illuminated images, wherein each of the labelled illuminated images is an image of the ID document captured whilst a different coloured light is projected thereon, and tagged with a label corresponding to the different coloured light projected;

a score generating device to generate, using a softmax function of a trained classifier model, a confidence score associated with the plurality of labelled illuminated images, wherein the plurality of labelled illuminated images is a consolidated input to the trained classifier model; and

an authenticating device to authenticate the ID document based on a comparison between the confidence score and a threshold, wherein the threshold corresponds to a pre-determined false acceptance rate.

8. The system as claimed in claim 7, wherein the trained classifier model comprises a plurality of kernels with each kernel corresponding to a feature of an image of a genuine ID document captured whilst a coloured light is projected thereon.

9. The system as claimed in claim 7 or 8, wherein the plurality of labelled illuminated images comprises three labelled illuminated images, and wherein:

a first labelled illuminated image is a first image of the ID document projected with a first coloured light;

a second labelled illuminated image is a second image of the ID document projected with a second coloured light; and

a third labelled illuminated image is a third image of the ID document projected with a third coloured light.

10. The system as claimed in claim 9, wherein the first coloured light is red light, the second coloured light is green light, and the third coloured light is blue light, and wherein the first coloured light, the second coloured light and the third coloured light are projected onto the ID document in any order.

11. The system as claimed in any one of claims 7 to 10, further comprising an image processing device to perform image processing on the plurality of labelled illuminated images to remove background images from the plurality of labelled illuminated images.

12. The system as claimed in any one of claims 7 to 11, wherein the threshold is determined based on a receiver operating characteristic curve, and wherein the ID document is authenticated on a condition that the confidence score is lower than the threshold.

13. The method as claimed in any one of claims 1 to 6, wherein the plurality of labelled illuminated images comprises a pre-determined number of labelled illuminated images, and wherein the classifier model is trained based on the pre-determined number of labelled illuminated images.

14. The system as claimed in any one of claims 7 to 12, wherein the plurality of labelled illuminated images comprises a pre-determined number of labelled illuminated images, and wherein the classifier model is trained based on the pre-determined number of labelled illuminated images.