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DETECTING LIVE PERSON FOR THE FACE RECOGNITION PROBLEM

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Submitted in partial fulfilment of

the requirements for

the degree of

Master of Information Sciences

Massey University

2016

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Abstract

Face recognition has been a challenging problem for computer vision scientists for the last few decades. Hence it was the center of attention for computer vision researchers. The purpose of this research is to improve the security of the face recognition system by identifying the liveness of a person in front of a camera to be recognised.

The objective was to detect if the images used to be recognised reflect a real person's face, i.e., a live person's face instead of just a static image of the face. This can be achieved by randomly asking the person to carry out certain tasks. Simple tasks such as blinking an eye or smiling can then be repeated randomly according to the instructions given by the new system, so even a video of the target face made previously would not be able to perform the authentication easily.

Each component of the system were tested separately. The accuracy of the face detection component was impressively at 98.93%. The eye blinking detection uses a new proposed method with a high accuracy of 91%. Face recognition component was also tested and had a high recognition rate of 96%.

Keywords: Face Recognition, Face Detection, Eigenfaces, OpenCV, Face Anti-Spoofing, Eye Detection, Smile Detection, Eye Blinking Detection

Acknowledgements

I would like to express my sincere gratitude and regards to my supervisors Doctor Andre Barczak and Doctor Napoleon Reyes for their guidance and support during the course of my thesis.

I must express my very profound gratitude to my beloved wife for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without her. Thank you.

Finally, I would also like to acknowledge Intel for providing an open source library that is heavily used in this project that is OpenCV library.