



Master Thesis: Smartphone Iris Recognition Framework

Increased usage of smartphones has opened up a new avenue for exploring them as biometric sensors. Recently Apple Inc, has introduced fingerprint sensor integrated smartphone and due to the low level robustness provided by such fingerprint sensor based smartphone [1], it is essential to look for other biometric characteristic. As human iris is a robust biometric characteristic, it presents an interesting area to explore smartphone based iris recognition and develop a framework. Previously, MBASSy [2, 3] has successfully demonstrated the use of smartphone as a biometric sensor.

In this work, we aim to develop a framework for iris recognition on Android based smartphones. The application framework shall be integrated into MBASSy module to present users with additional possibility of using iris for biometric authentication. The iris image can be captured using the primary/secondary camera in the smartphones followed by segmentation and normalization of iris. Normalized iris is used for feature extraction and comparison. (Refer Figure 1 for visualization of iris image acquisition to iris feature extraction.)

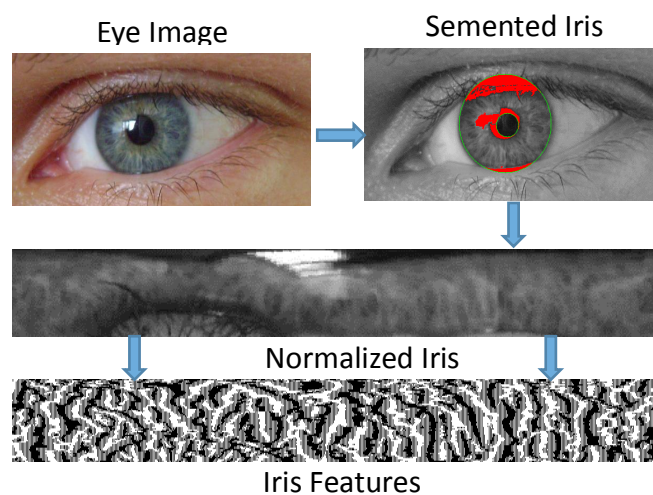


Figure 1 Iris feature extraction

Note: Highly qualified foreign students can get financial support to cover cost of an internship

Contact persons:

Kiran B Raja (Kiran.raja@hig.no); Dr. Raghavendra Ramachandra (raghavendra.ramachandra@hig.no);
Prof. Christoph Busch (christoph.busch@hig.no)

References

[1] Chaos Computer Club (CCC). Chaos computer club breaks apple touchid. <http://goo.gl/hf81jS>.

[2] Heiko Witte and Claudia Nickel. Modular biometric authentication service system (MBASSy). In BIOSIG, pages 115–120, 2010.

[3] Chris Stein, Claudia Nickel, and Christoph Busch. Fingerphoto recognition with smartphone cameras. In Proceedings of the International Conference of the Biometrics Special Interest Group (BIOSIG - 2012), pages 1–12. IEEE, 2012.