Project Title:
Iris Analyser

Project Description:

Biometric systems identify the "identity" (i.e. owner) of the data which is unique to an individual, while soft biometrics identify the "demographic information" (such as age, gender, etc.) of the data which are not unique, but are nevertheless characteristic of an individual [2-6].

Iris has special pattern which reflects useful information related to individual's identity and demographic information, allowing to provide important information about an individual – perhaps especially in a typical forensics scenario - without providing a specific identification label.

In this project, you will develop a iris analyser system that will take the iris as an input, do analysis and output the identity, demographic and personal information of the owner.

In general, project will involve the following steps:

1. Literature review of biometric and soft-biometric based on iris data
2. Develop and implement prediction algorithms for identity and demographic information.
3. Design and implement a GUI for the iris analyser system.

Supervisor:
Meryem Erbilek

Software Requirements:
MATLAB (recommended) or Python

Hardware Requirements:
PCs

References:

[1] M. Erbilek, M. C. D. C. Abreu and M. Fairhurst, "Optimal Configuration Strategies for Iris Recognition Processing", IET Image Processing Conference (IPR 2012), 3-4 July, 2012, London, UK.

[2] M. Fairhurst, M. Erbilek and M. C. D. C. Abreu, "Exploring Gender Prediction from Iris Biometrics", International Conference of the Biometrics Special Interest Group (BIOSIG), pp. 1-11, 9-11 September, 2015, Darmstadt, Germany.

[3] M. Da Costa-Abreu, M. Fairhurst, M. Erbilek, "Age predictive biometrics: predicting age from iris characteristics", Iris and Periocular Biometric Recognition, IET, Chap. 10, pp. 213-234, 2017.

[4] M. Fairhurst and M. Erbilek, "Analysis of physical ageing effects in iris biometrics", Future Trends in Biometric Processing, IET Computer Vision, vol.5, no.6, pp. 358-366, November 2011.

[5] M. Erbilek, M. Fairhurst and M. C. D. C. Abreu , "Improved age prediction from biometric data using multimodal configurations", International Conference of the Biometrics Special Interest Group (BIOSIG), 10-12 September, 2014, Darmstadt, Germany.

[6] M. Erbilek, M. Fairhurst and M. C. D. C. Abreu, "Age Prediction from Iris Biometrics", 5th International Conference on Imaging for Crime Detection and Prevention (ICDP13), 16-17 December, 2013, London, UK.