Note on CASIA-IrisV1

1. Introduction

Iris recognition has been an active research topic in recent years because of its high accuracy. There is not any public iris database while there are many face and fingerprint databases. Lacking of iris data may be a block to the research of iris recognition. To promote the research, National Laboratory of Pattern Recognition (NLPR), Institute of Automation (IA), Chinese Academy of Sciences (CAS) will provide iris database freely for iris recognition researchers. Iris images of CASIA V1.0 (CASIA-IrisV1) were captured with a homemade iris camera. Eight 850nm NIR illuminators are circularly arranged around the sensor to make sure that iris is uniformly and adequately illuminated. In order to protect our IPR in the design of iris camera (especially the NIR illumination scheme) before appropriate patents were granted, the pupil regions of all iris images in CASIA-IrisV1 were automatically detected and replaced with a circular region of constant intensity to mask out the specular reflections from the NIR illuminators before public release. Clearly, such processing may affect pupil detection but has no effects on other components of an iris recognition system such as iris feature extraction since iris feature extraction only uses the image data in the region between the pupil and the sclera, i.e. the ring-shaped iris region.

2. Brief Descriptions and Statistics of the Database

CASIA Iris Image Database Version 1.0 (CASIA-IrisV1) includes 756 iris images from 108 eyes. For each eye, 7 images are captured in two sessions with our self-developed device CASIA close-up iris camera (Fig.1), where three samples are collected in the first session (Fig.2(a)) and four in the second session (Fig.2(b)). All images are stored as BMP format with resolution 320*280

In order to protect our IPR in the design of our iris camera (especially the NIR illumination scheme), the pupil regions of all iris images in CASIA-IrisV1 were automatically detected and replaced with a circular region of constant intensity to mask out the specular reflections from the NIR illuminators (see Fig.1). Such editing clearly makes iris boundary detection much easier but has minimal or no effects on other components of an iris recognition system, such as feature extraction and classifier design.

It is suggested that you compare two samples from the same eye taken in different sessions when you want to compute the within-class variability. For example, the iris images in the first session can be employed as training dataset and those from the second session are used for testing.
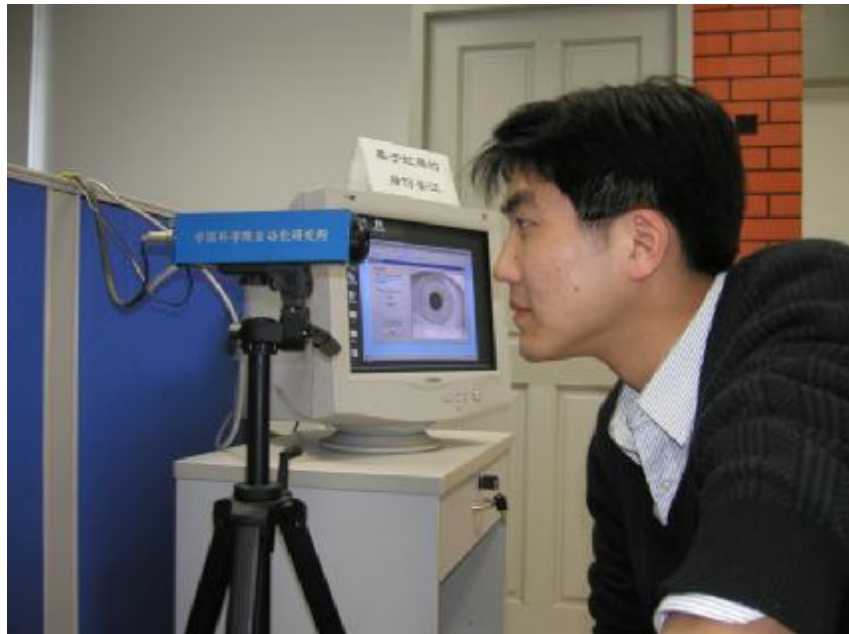

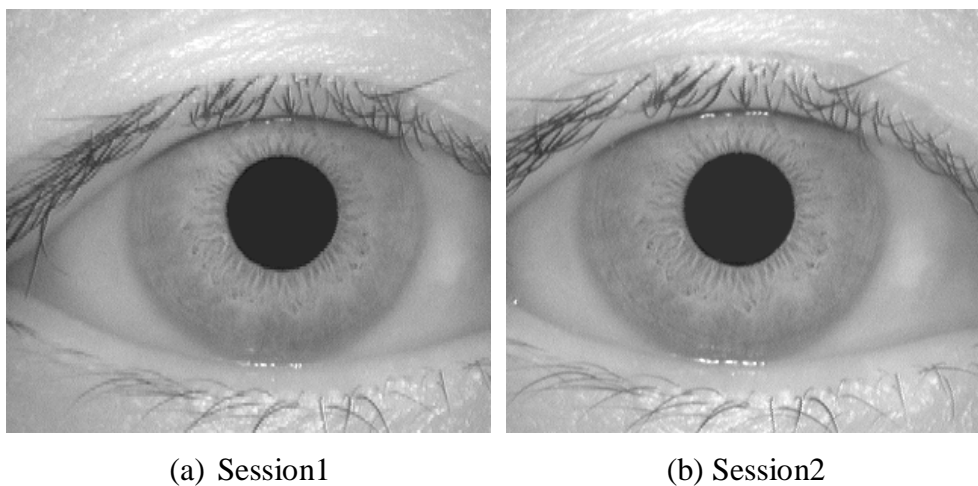Fig.1 The self-developed iris camera used for collection of CASIA-IrisV1

(a) Session1   (b) Session2

Fig.2 Example iris images in CASIA-IrisV1

3. Database Organization

The file name of each image in CASIA-IrisV1 is unique to each other and denotes some useful properties associated with the image such as session ID, class ID, image ID etc.

The images of CASIA-IrisV1 are stored as:

$root path$/*XXX_S_Y.bmp*

XXX: the unique identifier of eye, range from 000 to 108.

S: the index of session, denotes the first session and the second session.

Y: the index of image in the same session. Range from 1 to 3 in the first session, 1 to 4 in the second session.

Therefore *XXX_S_Y:bmp* means the iris image with index Y in session S from eye *XXX*.

4. Copyright Note and Contacts

The database is released for research and educational purposes. We hold no liability for any undesirable consequences of using the database. All rights of the CASIA database are reserved. Any person or organization is not permitted to distribute, publish, copy, or disseminate this database. In all documents and papers that report experimental results based on this database, our efforts in constructing the database should be acknowledged as: "Portions of the research in this paper use the CASIA-IrisV1 collected by the Chinese Academy of Sciences' Institute of Automation (CASIA)" and a reference to "CASIA-IrisV1, http://biometrics.idealtest.org/" should be included. A copy of all reports and papers that are for public or general release that use the CASIA-IrisV1 should be forwarded upon release or publication to:

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