BEST PAPER AWARD

PREISTRÄGER

»IMPACT ON BUSINESS«
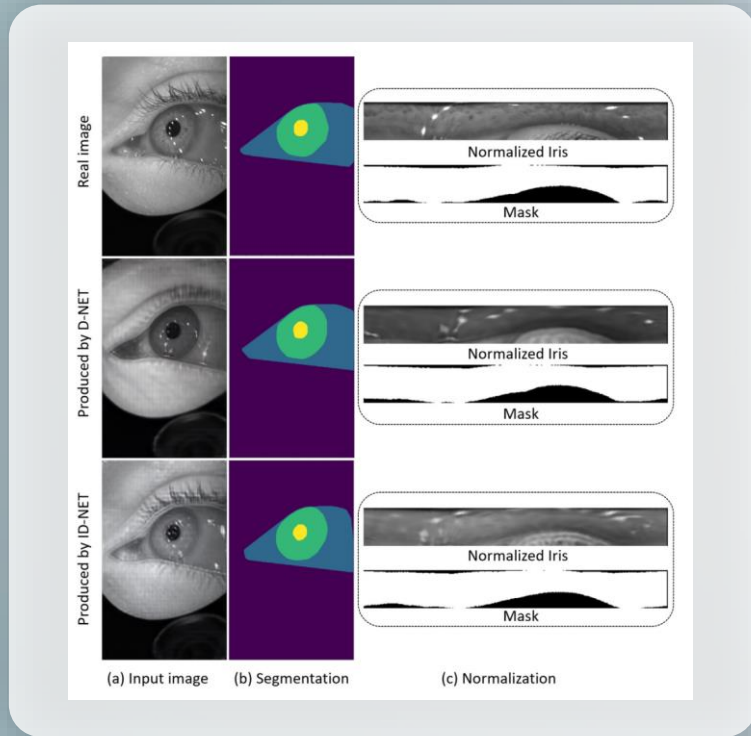
COMPUTER GRAPHICS NIGHT

DONNERSTAG, 2. DEZEMBER 2021

Best Paper Award

Boutros, Fadi (Fraunhofer IGD)
Damer, Naser (Fraunhofer IGD)
Raja, Kiran (NTNU, Gjovik, Norway)
Ramachandra, Raghavendra (NTNU, Gjovik, Norway)
Kirchbuchner, Florian (Fraunhofer IGD)
Kuijper, Arjan (Fraunhofer IGD)

»Iris and Periocular Biometrics for Head Mounted Displays:
Segmentation, Recognition, and Synthetic Data Generation«
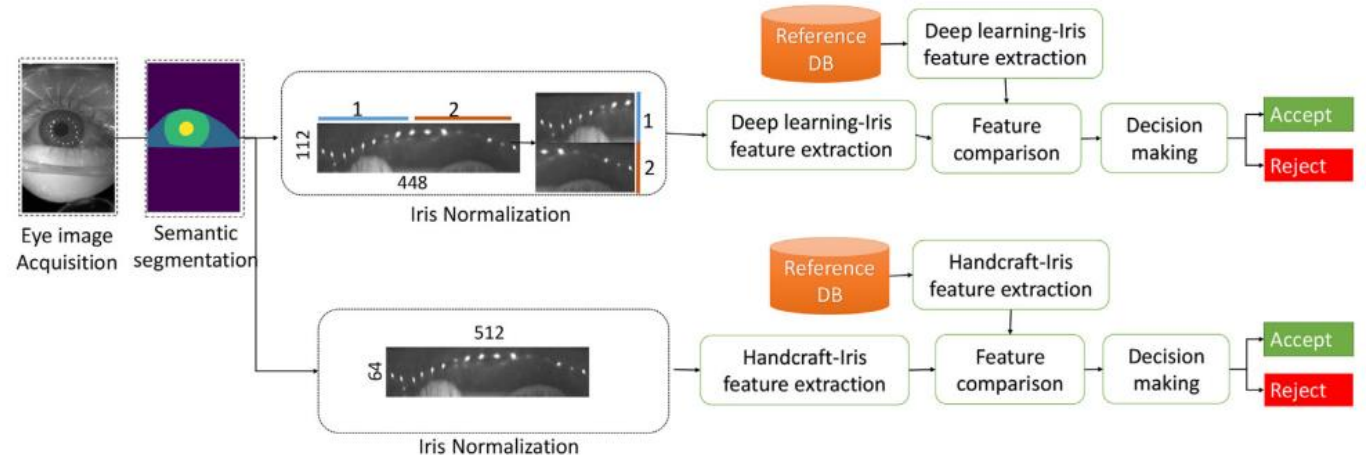
Best Paper Award

Image from Boutros, Fadi, et al. "Compact Models for Periocular Verification Through Knowledge Distillation." BIOSIG, IEEE, 2020.

PROBLEM

➢ Rapidly growing security needs in Virtual and Augmented Reality

➢ Is Biometric authentication possible?
  ➢ Can the iris and ocular images captured from HMD devices be used for a non-collaborative biometric authentication?

Overview of iris recognition workflow from eye image acquisition to feature extraction
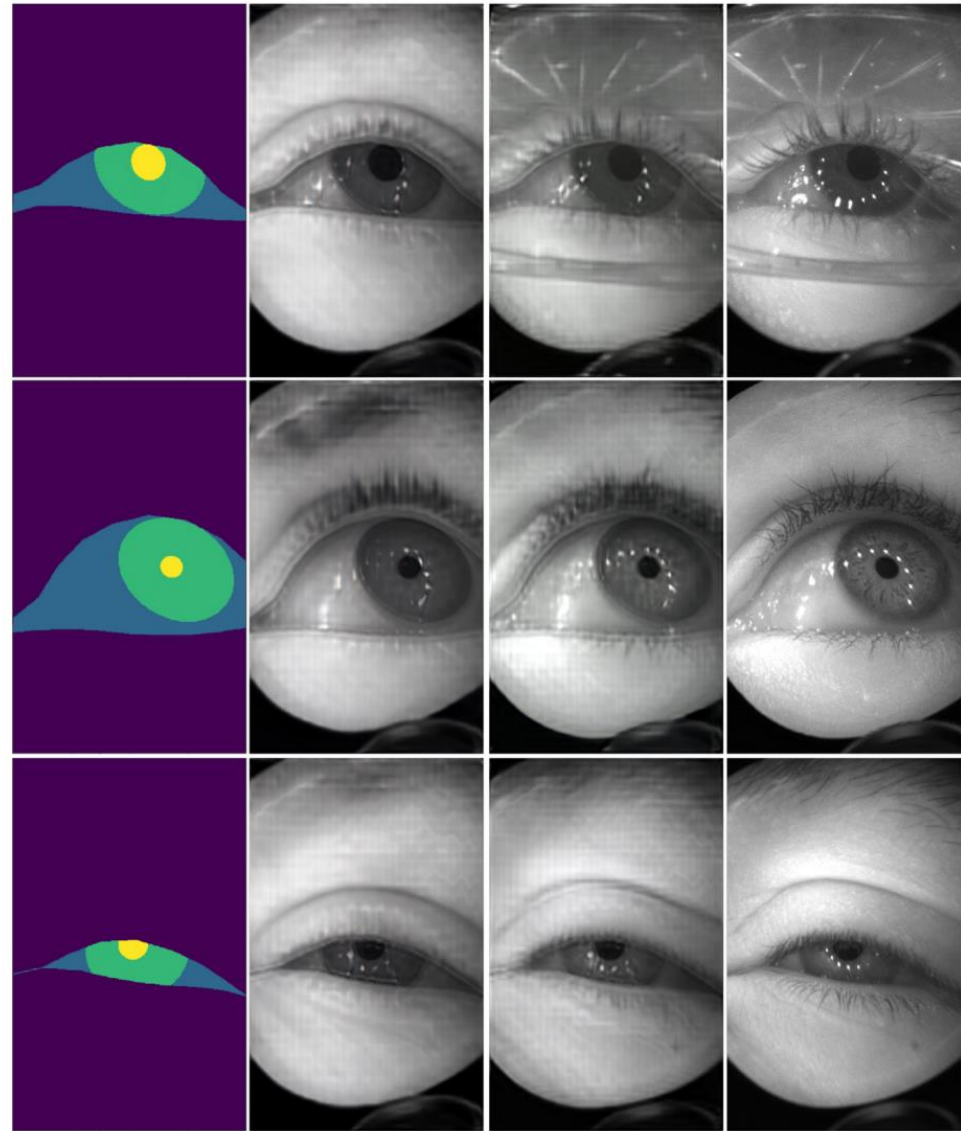
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RESULT

> Demonstrates the use of HMD internal cameras for iris and periocular biometrics
>> Compact models for near accurate segmentation
>> Realizes authentication based on iris recognition
> Enables the automatic generation of
>> large scale training data
>> presentation attack samples.

USP

> biometric verification
>> does not require user collaboration
>> takes low computation resources into account
> High potential for future applications in the context of virtual world technologies

(a) Input image   (b) D-NET (inter.)   (c) ID-NET   (d) Ground-truth