Facial Makeup Detection Technique Based on Texture and Shape Analysis

Neslihan Kose[1], Ludovic Apvrille[2], Jean-Luc Dugelay[3]

[1,3] EURECOM, Sophia Antipolis, France

[2] Institut Mines-Telecom, Telecom ParisTech, Sophia Antipolis, France

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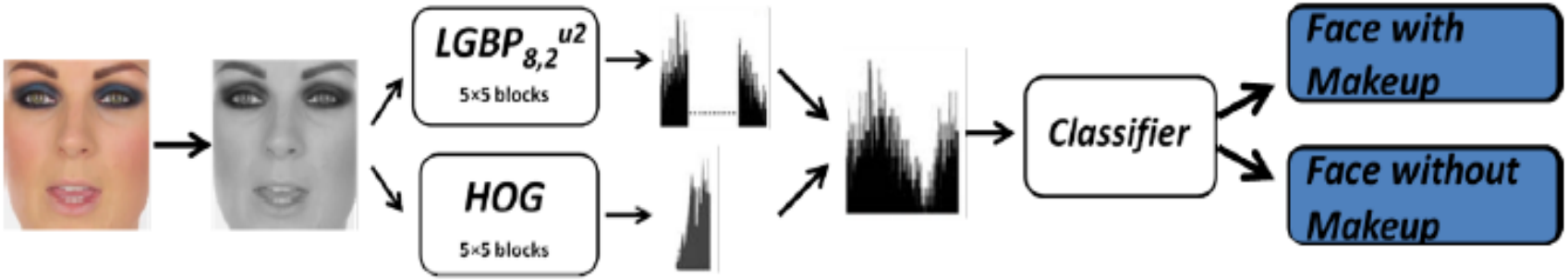
Reference Image and Makeup Series Images in their Original Form.

Flowchart of the Proposed Facial Makeup Detection Technique



LGBP → Texture Descriptor
HOG → Shape Descriptor

- Feature Level Fusion is applied for LGBP and HOG features

Experiment 1:

- 5-fold cross validation on YMU database (150 subjects, 600 images)

Classification Rates on the YMU Database.

Trial	SVM(%)
1	100
2	93.33
3	100
4	100
5	99.17
Average	**98.5**

Experiment 2:

- Training on the YMU database (300 makeup and 300 non-makeup images)
- Testing on the MIW database (77 makeup and 77 non-makeup images)

- o A classification rate of 99.35% was obtained with our proposed facial makeup detector.
- o The proposed approach is superior compared to the existing ones.

Experiment 3:

- 5-fold cross-validation on FCD Database (50 subjects, 385 images)

Classification Rates on the FCD Database.

Trial	SVM(%)	Alligator(%)
1	90.43	100
2	83.33	100
3	96.72	100
4	87.88	96.05
5	87.95	97.60
Average	**89.26**	**98.73**