



A Facial Features Detector Integrating Holistic Facial Information and Part-based Model

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Abstract:

We propose a facial landmarks detector, in which a partbased model is incorporated with holistic face information. In the part-based model, the face is modeled by the appearance of different face parts and their geometric relation. The appearance is described by pixel normalized difference descriptor. This descriptor is the lowest computational complexity as compared with existing state-of-the-art while it has a similar accuracy. On the other hand, to model the geometric relation between the face parts, the complex Bingham distribution is adapted. This is because the complex Bingham distribution has a symmetric property so it is invariant to rotation, scale, and translation. After that the global information is incorporated with the local part-based model using a regression model. The regression model estimates the displacement to the final face shape model. The the proposed detector is evaluated on two datasets. Experimental results show that it outperforms the state-of-the-art approaches in detecting facial landmarks accurately.

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