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Blind Image Quality Prediction by Exploiting Multi-level Deep Representations

Fei Gao, Jun Yu, Suguo Zhu, Qingming Huang, Qi Tian

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## Highlights

- We propose to learn an effective BIQA model by exploiting off-the-shelf DNNs. Specially, we exploit a very deep DNN model pre-trained in the image classification task for feature extraction, and then use “shallow” learning techniques for quality prediction. In this way, we leverage the benefits introduced by very deep DNNs and the difficulty in training a very deep DNN model;
- In addition, to get the best of both the intermediate-level and high-level representations, we propose to reason the image quality at each level of representation, and use the ensemble average as the final quality index; and
- Finally, the proposed method works remarkably well and is highly comparable to state-of-the-art BIQA methods, over various canonical datasets. The impressive performance coupled with the low cost in training, make the proposed framework a promising option for tackling the IQA problems for other types of media, because it is difficult to either collect a large set of labeled images or train a very deep model.

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