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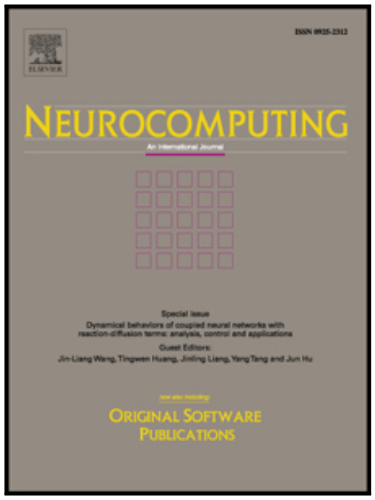

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Exploiting inter-image similarity and ensemble of extreme learners for fixation prediction using deep features

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Abstract

This paper presents a novel fixation prediction and saliency modeling framework based on inter-image similarities and ensemble of Extreme Learning Machines (ELM). The proposed framework is inspired by two observations, 1) the contextual information of a scene along with low-level visual cues modulates attention, 2) the influence of scene memorability on eye movement patterns caused by the resemblance of a scene to a former visual experience. Motivated by such observations, we develop a framework that estimates the saliency of a given image using an ensemble of extreme learners, each trained on an image similar to the input image. That is, after retrieving a set of similar images for a given image, a saliency predictor is learnt from each of the images in the retrieved image set using an ELM, resulting in an ensemble. The saliency of the given image is then measured in terms of the mean of predicted saliency value by the ensemble's members.

Keywords: Visual attention, saliency prediction, fixation prediction, inter-image similarity, extreme learning machines

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