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基于Gabor相位和局部二值模式的AAM纹理表示

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摘要:

提出一种基于Gabor相位与局部二值模式(local binary patterns, LBP)算子的活动表观模型(active appearance model, AAM)。与基于亮度的AAM相比,改进模型在三个方面提高了算法性能:提供多尺度多方向的Gabor纹理,提高了模型的匹配精度;增强了对外部环境变化(如光照)的鲁棒性;基于LBP的纹理编码去除了大量冗余。实验结果表明该模型能够有效提高模型的匹配精度。

关键词: 活动表观模型 纹理建模 Gabor相位特征 局部二值模式

Gabor phase and LBP based texture representation in AAM

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Abstract:

An active appearance model(AAM) based on Gabor phase and local binary patterns(LBP) is presented. In comparison with the intensity based AAM, the proposed model improves the performance in three aspects: providing multi-scale and multi-direction Gabor texture which enhances the fitting accuracy of the model; improving the robustness to environmental changes, e.g., illumination; LBP based texture coding reduces a large amount of the redundancy. Experimental results on various datasets demonstrate that the proposed model can effectively improve the fitting accuracy.

Keywords: active appearance model texture modeling Gabor phase feature local binary pattern

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