

图形、图像、模式识别

基于彩色形态学的水彩画模拟

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摘要 通过分析和研究非真实感水彩画的绘制方法及特征, 提出一种基于多结构多尺度彩色形态学的非真实感水彩画模拟方法。在实现水彩画的边缘暗色化及流动图案等特征的过程中, 结合彩色形态学的开、闭、膨胀和腐蚀算子理论, 设计一种新的环形、圆形与菱形相结合的结构元素, 采用不同尺寸的多结构元素及多空间尺度的图像特征, 在不同的颜色模型内进行操作, 最终实现了非真实感水彩画的有效模拟。实验结果表明, 该方法成功模拟出非真实感水彩画的独特艺术效果。

关键词 [多结构多尺度](#) [非真实感](#) [彩色形态学](#) [颜色模型](#)

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Watercolor simulation based on color morphology

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Abstract

Through analysis and study of non-photorealistic watercolor rendering methods and features, this paper proposes a non-photorealistic method of watercolor simulation based on multi-structure and multi-scale color morphology. During the process of achieving its edge darkening and patterns flowing, it designs a new combination of structures such as ring, circular and diamond by taking advantage of the color morphology's open and close, the expansion and corrosion operator theory. The effective simulation of non-photorealistic watercolor is finally realized by using various sizes of multi-structure elements and different spatial scales of image feature and operating in different colored models. The result of the experiment shows that this method simulates the unique artistic effect of non-photorealistic watercolor successfully.

Key words [multi-structure and multi-scale](#) [non-photorealistic](#) [color morphology](#) [colored model](#)

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