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基于样本学习的人像线条画生成系统

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Abstract

In this paper, an example-based facial sketch system is presented, which automatically generates a sketch from an input image. All the example sketches are drawn with a particular style. There are two key elements in this system, a non-parametric sampling method and a flexible sketch model. Given an input image pixel and its neighborhood, the conditional distribution of a sketch point is computed by querying the examples and finding all similar neighborhoods. An expected sketch image is then drawn from the distribution to reflect the drawing style. Finally, good quality facial sketches are obtained.

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摘要

介绍了一个基于样本学习的人脸线条画生成系统.该系统可以根据用户给定的正面人脸照片自动生成相应的人脸线条画.在系统中有两个关键技术,即非参数化采样方法和灵活的线条画模板.对于给定图像上的任意像素点及其邻域,通过在样本空间搜索并匹配所有的相似邻域,计算该像素点在相应的线条画上出现的条件概率;然后根据艺术家的风格和得到的条件概率绘制"期望的线条画";最后使用模板匹配得到最后的线条画.此方法可以生成高质量的正面人脸线条画.

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