A Novel Method for Continuity Based Edge Detection

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Abstract

The goal of this work is to use edge continuity metrics to improve the detection of salient edges in images. It is argued that continuity can act as a proxy for saliency in broad classes of images, especially those involving the extraction of human-made artefacts from natural scenes. Multiple inter-related methods of determining directional edge continuity and strength are described and evaluated. The final system is subjectively evaluated and compared to a number of state-of-the-art edge detectors. The results show that the system performs well on its stated goals of extracting continuous smooth detail from images while suppressing textural noise. Further, edge directionality is found to be a valuable metric for reducing noise in detected edges.