

# Level Set Algorithms for Capturing illusory contours

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## Abstract

*Illusory contours are intrinsic phenomena in human vision. A salient character of these contours is that some parts of them are missing. However, human vision system can complete them and thus yield reasonable vision perception. Therefore, to recognize illusory contours is indeed to complete missing contours or boundaries. Many methods have been proposed for this problem in the literature. In this talk, we will present two different level set based methods to identify illusory contours. The first method employs shape information. That is, we would like to find a suitable contour with a known shape to match the existing boundaries in the given image. The best matching determines the desirable illusory contour. The second method is more general than the first one, since it requires no shape information. For this method, we incorporate Euler's Elastica to complete missing boundaries in a curvature continuity way, which conforms to human perception. For each method, we will show experimental results, including classical illusory contours such as Kanizsa triangle and Kanizsa square.*