图形、图像、模式识别

基于标号回传的二值图像连通体标记算法

周 跃[1, 2]，闫 丰[1]，章明朝[1, 2]，隋永新[1]，杨怀江[1]

1.中国科学院 长春光学精密机械与物理研究所 应用光学国家重点实验室，长春 130033
2.中国科学院 研究生院，北京 100039

摘要　　提出一种基于游程标号回传的二值图像连通体标记算法，该算法以游程为处理对象，将目标结构中的标号传播到游程结构中，进行游程连通性判断，将与当前游程连通的游程中最小值回传到对应的目标结构中，确保在同一连通域中有相同的根标号，进而完成二值图像标记。该算法对二值图像可以实现一次性标记，同时完成连通区域的面积、质心等特征信息的提取。具有占用内存小、实现简单、能标记任意复杂连通区域的优点，可用于红外弱小目标的检测。

关键词　　二值图像　连通体标记　游程
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Algorithm for connected component labeling of binary image based on label transmitting

ZHOU Yue[1, 2]，YAN Feng[1]，ZHANG Ming-chao[1, 2]，SUI Yong-xin[1]，YANG Huai-jiang[1]

1.State Key Laboratory of Applied Optics，Changchun Institute of Optics，Fine Mechanics and Physics，Chinese Academy of Sciences，Changchun 130033，China
2.Graduate School of the Chinese Academy of Sciences，Beijing 100039，China

Abstract

　A new method for connected component labeling of binary image is proposed.When scanning the input image the method transmits the label in target information structure into run-length structure，judges the connectivity between run-length，then transmits back the minimum of the labels between the run-length structures that are connected.So it can make sure that it has the same label between connected regions.The algorithm reduces the number of image scanning to one time and gets the information of connected region，like area，perimeter，and center of mass and so on.Compared with the traditional labeling algorithm，it uses less memory，realizes more easily，and also can label more complex connected regions，thus can be used in detecting of infrared target.

Key words　binary image　connected components labeling　run-length

通讯作者　周 跃