

论文与报告

## 弱正则化边缘检测

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摘要

提出一种新的边缘检测方法,称为弱正则化法.它包括图象的弱正则化重建(WRR)和边缘提取(EF)两级处理. WRR的特点是在重建泛函中引入一个受控平滑性稳定子,使平滑性约束的强弱依图象各处边缘存在的可能性而调整. EF主要是一个边缘修剪算法,它通过一个度量边缘局域几何结构合理性的代价函数的最小化实现最佳修剪.文中给出了实验结果.

关键词 [边缘检测](#) [正则化](#) [弱正则化](#) [受控平滑性稳定子](#) [边缘修剪](#)

分类号

## Edge Deection by Weak Regularization

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Abstract

A new technique of edge detection which called weak regularization approach is presented. The technique consists of two stages. The first is a weakly regularized reconstruction (WRR) of image functions, the second is an edge finding (EF) procedure. The WRR is characterized by a controlled-smoothness stabilizer in the reconstruction functional by means of which smoothness constraint on the reconstructed image is adjusted (released or tightened) with the possibility of occurrence of edges in the underlying image. What is new in the EF is an edge pruning technique that yields optimal pruning by minimizing a cost function for the evaluation of local geometrical structure of edges. Experiment results that demonstrate the performance of the technique are given.

Key words [Edge detection](#) [regularization](#) [weak regularization](#) [controlledsmoothness stabilizer](#) [edge pruning](#)

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