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Liver Edge Detection System

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Abstract

This paper analyzes the process of edge detection applied to liver sonograms and its benefit in the medical domain for aiding in the analysis and diagnosis of the human liver. To provide a solution, multiple edge detection solutions are compared with each other as well as a proposed method in order to find the algorithm that works best for this use case, which is for sonograms, after which evaluations are carried out. The results of this study shows that the edge detection of liver sonograms is beneficial to sonographers, and that the proposed method for detecting edges in liver sonograms is of expected quality and works better than previous methods in terms of output quality, as well as speed. This study shows that the methods of edge detection can be improved in quality and that the medical domain is in need of tools such as the one implemented in this study. There is room for future work to improve the proposed solution further and to implement more features that will be beneficial to sonographers.

Keywords: Sonography, Ultrasound, Sonogram, Liver, Edge Detection, Canny Operator