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Monte Carlo Based Digital Image Simulation Processing

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A Thesis Submitted in Requirement for the Degree of PhD in Digital Image Processing

By

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Abstract

Image segmentation is a fundamental first step image processing technique which helps attaining the objectives of computer vision. The primary objective of this thesis is to enhance existing image segmentation methods based on Monte Carlo integration.

We have suggested Monte Carlo techniques to find the ensemble average of neighboring image properties. This way, more precise image operations such as edge detection, merging areas of similar properties and meshing techniques will be possible.

Examples from everyday's activities using advanced computer graphics and image analysis techniques are used. Future work includes using of enhanced algorithms in medical image segmentation and analysis.