The Simulation of Edge Detection, of Binary Image, through Improved Particle Swarm Optimization

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Abstract.

Edge detection is evolving very fast in algorithmic design approach especially in digital image processing.
This research reflects the results of improved-PSO algorithm, in the perspective of time execution, designed to be integrated edge detection.
The improved version of the PSO algorithm uses exponential relationship, instead of linear one, between the positions of "the two swarms".
The result of the research leads to minimizing, at approximately 25%, time execution of the linearized PSO implemented with Matlab for edge detection.
This research unfolds limitations and discussions on further improved time-execution performance of PSO algorithm implemented in digital image processing applications.

Keywords. image, Matlab, algorithm, edge detection

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