A COMPARATIVE EVALUATION OF COMPETITIVE LEARNING ALGORITHMS FOR EDGE DETECTION ENHANCEMENT (MonPmPO3)

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Abstract:
Most edge detection algorithms include three main stages: smoothing, differentiation, and labeling. In this paper, we evaluate the performance of algorithms in which competitive learning is applied first to enhance edges, followed by an edge detector to locate the edges. In this way, more detailed and relatively more unbroken edges can be found as compared to the results when an edge detector is applied alone. The algorithms compared are K–Means, SOM and SOGR for clustering, and Canny and GED for edge detection. Perceptually, best results were obtained with the GED–SOGR algorithm. The SOGR is also considerably simpler and faster than the SOM algorithm.