

Fuzzy Logic based Improvement in Discrete Wavelet Transform Edge Representation in Images

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Abstract

We introduce a rule base fuzzy technique on decomposed wavelet coefficients, to improve the wavelet edge representation. Our algorithm mitigates ‘incorrect’ responses, due primarily to the symmetries of directional derivative filters. Since the Discrete Wavelet Transform (DWT) coefficients are revealed from two dimensional symmetric filter banks and undermine some gradient information. These wavelet coefficients are prearranged into ‘if-then’ rule structure of a fuzzy inference system, to improve the wavelet edge representation.

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