



ROBUST FUZZY CORNER DETECTOR

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ABSTRACT—Reliable corner detection is an important task in determining the shape of different regions within an image. Real-life image data are always imprecise due to inherent uncertainties that may arise from the imaging process such as defocusing, illumination changes, noise, etc. Therefore, the localization and detection of corners has become a difficult task to accomplish under such imperfect situations. On the other hand, Fuzzy systems are well known for their efficient handling of impreciseness and incompleteness, which make them inherently suitable for modelling corner properties by means of a rule-based fuzzy system. The paper presents a corner detection algorithm which employs such fuzzy reasoning. The robustness of the proposed algorithm is compared to well-known conventional corner detectors and its performance is also tested over a number of benchmark images to illustrate the efficiency of the algorithm under uncertainty.

Key Words: corner detection, fuzzy image filtering, noise reduction, intelligent image processing.