Abstract

Digital image processing is a subset of the electronic domain where the image is converted to an array of small integers, called pixels, symbolizing a physical quantity such as scene radiance, stored in a digital memory, and processed by computer or other digital hardware. Interest in digital image processing methods stems from two principal applications areas: improvement of pictorial information for human interpretation; and processing of image data for storage, transmission, and representation for autonomous machine perception. Edges characterize boundaries and edge detection is one of the most difficult tasks in image processing hence it is a problem of fundamental importance in image processing. Edges in images are areas with strong intensity contrasts and a jump in intensity from one pixel to the next can create major variation in the picture quality. Edge detection of an image significantly reduces the amount of data and filters out useless information, while preserving the important structural properties in an image. This research problem deals with a novel adaptive neuro-fuzzy inference system (ANFIS) for edge detection in digital images. The internal parameters of the proposed ANFIS edge detector are optimized by training using by proposed training pattern.
Novel Adaptive Neuro-Fuzzy based Edge Detection Technique

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Index Terms

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