Modified minimum maximum exclusive mean filter

ABSTRACT

In an environment of fierce noise contamination, infected pixels tend to connect into noise blotches that could give the filtering algorithm an illusion of being part of the original image data. Therefore, many impulses would be difficult to detect, with the consequence of a less chance for proper detection and thus, filtering. Previously, median filters or its variant have been adopted to filter image corrupted with impulsive noise. Although advanced techniques have been added to these filters, many details such as thin lines and edges are either lost or blurred, especially at high noise situation. In this paper, a filtering method that consists of two stages, namely impulse noise detection and noise filtering is proposed, where the two stages are carried out separately and iteratively. Through computer simulation, the effectiveness of the suggested filter has been proven, especially at the high impulse noise levels.