Fabric Defect Detection in Handlooms Cottage Silk Industries using Image Processing Techniques

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Abstract

Detection of defect on finished fabrics and their classification based on their appearance plays a vital role in inspection of both hand-woven and machine woven fabrics. Generally the defect detection process is carried out by making use of the manual effort, during which some of fabric defects are very small and undistinguishable and can be identified only by monitoring the variation in the intensity falling on the fabric. Till date, most of the fabric industries in India carry out the process of defect detection by making use of a very skilled labor. An automated system that could detect defects and identify them based on their physical appearance would naturally enhance the product quality and result in improved productivity to meet both customer demands and reduce the costs associated with off-quality. This paper focuses on developing algorithms to check if a given fabric contains any one of the defects listed out in [1] and if so, what kind of defect and the location of the defect within the analyzed area. The next sections of the paper deal with the defect detection process using Multi Resolution Combined Statistical and Spatial Frequency (MRCSF), Markov Random Field Matrix method (MRFM), Gray Level Weighted Matrix (GLWM) and Gray Level Co-occurrence Matrix (GLCM).
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Index Terms

Computer Science Vision

Keywords

Defect Detection in Silk Fabrics Pattern Recognition