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I d c

Fabric defect detection is essential to guarantee the quality of textile products. Traditional manual inspection methods are time-consuming, subjective, and prone to errors. Computer vision techniques o er a promising solution by automating the defect detection process. is section provides an overview of the importance of fabric defect detection, the challenges involved, and the potential bene ts of computer vision-based approaches [1]. Sophisticated machines are used in textile industry to create this fabric, and defects are located through the inspection process. Traditionally, inspection process is completed by using manual human e orts to ensure the quality of fabric. e price of fabric that is sent to the market depends on the number of co-occurrence of defects and price increase with the increase in the number of defects.

H a -ba d a ac

A histogram is a display of statistical information computed on the basis of the number of co-occurrence of gray levels in an image. According to the literature, the spatial approaches have the advantage of being computationally simple but have weak performance in the detection of small defects. Wavelet transform-based approaches outperform the spatial methods in terms of computational e ciency and performance.

Based on the characteristics of cord fabric, Zhang et al. proposed a multiple windows gray ratio for the detection of cord fabric defects. e main motivation behind MWGR is that the normal cord fabric grayscale image exhibits an alternating gray and white pattern. A threshold is useerarforrtintdo

detection methods exist in the literature, their comparison is helpful for researchers to nd the optimal method depending on fabric type and defect. However, it should be considered that the studies are conducted using di erent databases, di erent parameters, and varied imaging systems, hence making the validity and reliability of methods far from objectivity [10].

C c

Fabric defect detection using computer vision techniques has revolutionized quality control in the textile industry. is article has provided a comprehensive review of image acquisition, preprocessing,