A New Method for Measuring Texture Regularity based on the Intensity of the Pixels in Grayscale Images

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Authors:
Khoerul Anwar, Agus Harjoko, Suharto Suharto

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Abstract

Texture regularity is one of the important visual characteristics. It can be used to determine differences in the surface between two objects. Several methods of measurement have been produced by previous researchers. However, in this paper the authors offer a new formula for calculating the regularity of texture features. Regularity is measured by the intensity of the pixels of grayscale images in a cross-diagonal position and the intensity of the pixels in an axis-ordinate position. The testing results of the new formula obtained good measurement accuracy. The linear test results using the human visual system worked. The observation of the human visual system suggested that a chessboard-image texture has a higher level of regularity than a bark-image texture. The results of measurement using the new formula showed that the value of the chessboard-texture regularity (0.2490) was greater (a higher level of regularity) than that of the bark-texture regularity (0.0078).

General term
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cross-diagonal, image, textures

References


Index Terms

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Keywords

regularity; intensity of pixels; diagonal ordinate-axis (DOA)