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## Abstract

One of the processes undertaken to determine the quality of animal skin for leather craft in the form of digital images is the process of image segmentation. A disability detection process is required to ensure that animal skins used for craft are right-near as expected. In this research, the evolutionary method is used to process Darwinian segmentation of particle swarm optimization (DPSO) methods used for animal image segmentation process. The results were then compared with the Harmonic Search Algorithm (HSA) method. The process of image segmentation is important, if segmentation is done correctly then the next process will run correctly too. One of the problems usually faced is how to choose a good image segmentation method. Experiments had been done on four categories of animal leather images namely lizard leather, sheep leather, cow leather and goat leather. PSNR values  $\square\square$  were used to measure the quality of the segmentation method used. From the experimental results it is seen that there is little difference between the DPSO and HSA methods used in this study. It can be concluded, however, that the DPSO method is slightly better than the HSA in certain animal cases. PSNR value is higher when compared to using HSA methods on the same image.

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## Index Terms

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## Keywords

Image segmentation, images leather, harmonic search algorithm, Darwinian particle swarm optimizations