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VIDEO COLORIZATION
USING CANNY OPTIMIZATION TECHNIQUE

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DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Video colorization is one of the complex and challenging study in image processing area especially when the video is originally in grayscale format with a very poor quality. Nowadays, grayscale video movie will not be essential option for new generation to watch. More than that, children education also nee a colored video to make the learning interesting. This project will be developing the program that make the colorization on grayscale video is possible to be done, and the grayscale video is obtained from old classic P. Ramlee movie which is originally in grayscale. Development is time consuming especially on colorization process, and it will be develop using Matlab. In this study, development of video colorization is done in two stages. First stage purposely to convert the grayscale video to image or frame. Then, by applying the technique of Structural Similarity Index Measurement, calculation and comparison of data of the image will be used to determine the key frames of all the images. The second stage is video colorization which is the main purpose of this project. Colorization process will be using the technique of Canny Optimization method. This is a hybrid technique from Colorization using Optimization, which was modified and improved the algorithms by adding Canny Edge Detection to improve the colorization process on the grayscale image or frames. The expected outcome of this study is the grayscale video is successfully colored. This program is standalone software and developed using Matlab programming language. In future, it is recommended that this program prototype can improve the image quality and smoothen the colour distribution.

Keywords: Image colorization, key frame extraction, image processing, canny optimization

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