



Research Abstracts

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Digital technology-based solution for the issues of the conservation of two-dimensional (2D) artifacts in Sri Lanka

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Studying the issues of conservation is one of the crucial areas in the cultural heritage domain. It had been perceived that large size, low level technology and no repository are the main issues in the conservation process of 2D artifacts in Sri Lanka. The objective of this research is to propose a digital technology-based solution to overcome the above issues. Digitization of 2D artifacts was recognized as a solution for that. Image stitching in computer vision, which can be used to create panoramic images was identified as a technique for digitization. Furthermore, existing software such as Photoshop and Hugin was tested and observed the inconsistency during the creation process of panoramic images. Hence, authors proposed a novel approach for creating panoramic images of 2D artifacts that overcomes the identified issues. This approach was implemented as a new software. Authors created panoramic images of 5 sets of large-scale mural paintings from three historical temples using Photoshop, Hugin and new software. The subjective evaluation was done using three groups of participants having different knowledge perceptions in art. They were asked to rate the quality of panoramic images for the factors: color balance, image noise & distortion and overall quality against 4 levels. With the analysis of results, authors can show that new software will display higher accuracy as percentages in color balance (84.21%), image noise & distortion (86.42%) and overall quality (86.84%) for the created panoramic images than the other two software. Hence, this proposed digital technology-based solution can be used effectively and easily for the issues of conservation of 2D artifacts in Sri Lanka.

Key words: conservation, cultural heritage, two-dimensional artifacts, digital technology, image stitching