UNIVERSITI TEKNOLOGI MARA

EVALUATE AGISOFT METASHAPE AND PIX4D IN 3D MODEL RECONSTRUCTION

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Dissertation submitted in fulfillment
of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

This study compares the accuracy of 3D models generated using close-range photogrammetry with the accuracy generated by Agisoft Metashape and Pix4D software. In close-range photogrammetry, three-dimensional models are reconstructed by first gathering overlapping photos taken from various angles, then applying an algorithm known as Structure from Motion (SfM). The renovation of the facade is the primary focus of the evaluation. Based on the comparison findings without ground control points, Agisoft Metashape can produce more accurate models than Pix4D. Another factor is the time required for processing, and Pix4D demonstrates superior performance. In conclusion, both software alternatives are suitable for close-range photogrammetry; however, Agisoft Metashape provides a greater level of accuracy, while Pix4D shines in providing a faster processing speed. The choice depends on specific project requirements between accuracy and processing speed.

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