

ROCK SLOPE MONITORING USING LOW ALTITUDE REMOTE
SENSING (LARS) METHOD

FASHIHAH BINTI MAHUSIN

2019627688



COLLEGE OF BUILT ENVIRONMENT
UNIVERSITI TEKNOLOGI MARA
PERLIS

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FASHIHAH BINTI MAHUSIN

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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.

Name of Student : Fashihah binti Mahusin

Student I.D. No. : 2019627688

Programme : Bachelor of Surveying Science and Geomatics
(HONS) – AP220

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Signature of Student :

Date : August 2023

ABSTRACT

The Unmanned Aerial Vehicle or simply called drone are a hot topic that comprising a diverse aspect including technology, privacy right and even war and peace. Currently, remote sensing sensors are able to attached to UAV platform where it is suitable in monitoring and mapping the slope features. The stability of the rock slope is analyze using the vegetation index which is Normalized Differences Vegetation Index (NDVI) and the water index with the Normalized Difference Water Index (NDWI) for the land type features. NDVI has been used to analyze the healthiness of the vegetation where the healthier vegetation has a stronger root which is useful in stabilizing the slope and NDWI has the ability to detect the presence of the water where at the higher index NDWI potentially be less stable as the water seep through the crack line of the rock surface. To achieve the aims of this study, the objectives of this study is to generate spectral indices map using drone based multispectral images and to analyses the stability of rock slope by NDVI and NDWI techniques. The study area is carried out at Toll Plaza Bukit Merah, Semanggol, Perak and to accomplish the objective of this study, Agisoft Metashape and ENVI software has been used. This study will understand the techniques used is significant to be used as an indicator to investigate the rock slope failure based on the low-cost techniques and rapid data information.

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