

**UNIVERSITI TEKNOLOGI MARA**

**BUILDING EXTRACTION OF WORLDVIEW3  
IMAGERY VIA SUPPORT VECTOR MACHINE  
USING SCIKIT-LEARN MODULE**

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Dissertation submitted in partial fulfillment  
of the requirements for the degree of  
**Bachelor of Surveying Science and Geomatics (Hons)**

**Faculty of Architecture, Planning and Surveying**

**August 2020**

## 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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Thesis/Dissertation Title : Evaluation of Land Use Land Cover Changes Impacts  
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## ABSTRACT

Building is one of the major features that available on the land used on the earth especially in urban area. By using remote sensing method, it can reduce time to collect data for a large area. The data can be gain in high or low resolution. Low resolution image is cheaper and easy to access meanwhile high resolution can provide a better view and more accurate to differentiate the features available on image. Nowadays, researchers have investigated the use of different approach for building classification and extraction. However, there is need to monitor the effectiveness of the method used effectively. Consequently, this study is intending to apply Support Vector Machine (SVM) classification which using Scikit-learn module for building classification. Moreover, the capability of the programming based using python for building extraction can be assessed. Python is an open source of programming software that conducted programming-based technique using the Scikit-Learn module to do the extraction of building from Land used land cover (LULC) and the result was 86.233% for overall accuracy. A Commercial Remote Sensing Technology (ENVI) was used and measured to improve and verify the performance of the Python programming-based picture classification by applying the same SVM algorithm and the tests indicated 95.0732% for an overall accuracy

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