



UNIVERSITI TEKNOLOGI MARA

**MULTI TEMPORAL THREE DIMENSIONAL (3D)
ANALYSIS OF TREE HEIGHT AT FRIM FOREST**

NURNAJIHAH BINTI OTHMAN

Thesis submitted in fulfilment of
requirements for the degree of
Bachelor of Surveying Science and Geomatics (Hons)

Faculty of Architecture, Planning and Surveying

February 2021

AUTHOR'S DECLARATION

I declare that the work in this thesis/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 : NURNAJIHAH BINTI OTHMAN
Student I.D. No. : 2016709517
Programme : Bachelor of Surveying Science and
Geomatics (Honours) – AP220
Faculty : Architecture, Planning & Surveying
Thesis/Dissertation Title : Multi Temporal Three Dimensional (3D)
Analysis of Tree Height at FRIM Forest



Signature of Student :
Date : 15 FEBRUARY 2021

ABSTRACT

Forest monitoring tools are required by Michez et al. (2020) to promote successful and data-driven forest monitoring. This is due to land management and forest strategies. Nature is the primary source for humans to live in prosperity. Climate change that often results from unrestrained human activities has become a problem. For this reason, the best method to detect this problem also becomes an issue to resolve. Therefore, the forests play a vital role as a carbon mitigating and controlling the ecosystem. This study aims to produce the three-dimensional (3D) analysis structure comprised of height using the Airborne LiDAR dataset for the FRIM forest area. At the same time, the structures include tree crowns and the height of the canopy. Besides that, LiDAR data is a suitable data for this study to do an estimated percentage of Canopy Height Model (CHM) in the forest. The objective of this study is to produce the canopy height model (CHM) for the years 2009 and 2013 using LiDAR data and to produce the 3D single tree's height using FUSION software. Following this, the Airborne LiDAR is one of the best methods to research this study. Thereby, this method is believed to provide more accurate data in the 3D analysis.

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