

UNIVERSITI TEKNOLOGI MARA

**ASSESSMENT OF CROPS HEALTHINESS VIA
DEEP LEARNING APPROACH: PYTHON**

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**BACHELORS IN SURVEYING SCIENCE AND
GEOMATICS (HONOURS) - AP220**

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Thesis submitted in fulfilment
of the requirements for the degree of
Bachelors in Surveying Science and Geomatics (Honours)

College of Built Environment, CBE.

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AUTHOR'S DECLARATION

I declare that the work in this thesis 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 Under - Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Detecting healthy crops using Python in the context of an analysis project has emerged as an approach that speeds up a process to find out the current state of crops. This study focuses on using Python for remote sensing data analysis to identify and classify healthy crops. By leveraging image processing techniques, statistical analysis and machine learning algorithms, Python enables the extraction of relevant features and patterns from data. This feature includes spectral information, vegetation indices and other quantitative metrics that indicate plant health. This study addresses challenges related to data acquisition, preprocessing, feature extraction, and results. The importance of this study lies in its potential to provide an accurate and efficient algorithm for plant health assessment, in making informed decisions. By using Python in analytics projects, farmers can identify areas of concern, monitor crop health trends, and implement targeted interventions to optimize resource use and maximize yields. This research utilizing the Python programming language and the PyCharm integrated development environment (IDE) to integrate coding into the processing. This research utilized several libraries in PyCharm, including NumPy, Rasterio, and Matplotlib. Furthermore, these libraries provide an essential functionalities for data processing and visualization tasks .These findings emphasize the importance of a data-driven approach and the integration of Python in analytical projects helping to better crop management practices, increased sustainability and increased productivity in the agricultural sector.

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