**Graduation Project - English Abstract**

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| **Project Code:** | **IS6** |
| **Project Title (in English):** | **Plantera Farm automation system** |
| **Project Title (in Arabic):** | **نظام خبير لمعرفة وتشخيص النباتات** |
| **Scientific Department:** | **Artificial intelligence** |
| **Supervisor(s):** | **DR . Mahmoud Abd El Aal** |
| **Project Team:** | 1-Ahmed |

**Abstract**

The main objective of this project is to create a robust and user-friendly platform that assists botanists, researchers, and enthusiasts in their endeavors to identify various plant species and diagnose diseases affecting plants. The proposed system incorporates a vast knowledge base of plant taxonomy and pathology, ensuring accurate and reliable results.

To achieve the project's goals, an extensive dataset of plant images and associated metadata will be collected from diverse botanical sources and databases. The dataset will undergo meticulous preprocessing, including image augmentation and feature extraction, to extract meaningful and discriminative features that represent the unique characteristics of different plant species.

The implementation of the Expert System will involve the utilization of state-of-the-art machine learning algorithms, such as convolutional neural networks (CNNs), to train a model capable of classifying plants based on their visual attributes. The model will be trained on the collected dataset, employing rigorous training procedures, including cross-validation and hyperparameter tuning, to ensure optimal performance.