

AgriPest Mobile Application

Agricultural Pests' recognition using deep learning and ChatGPT

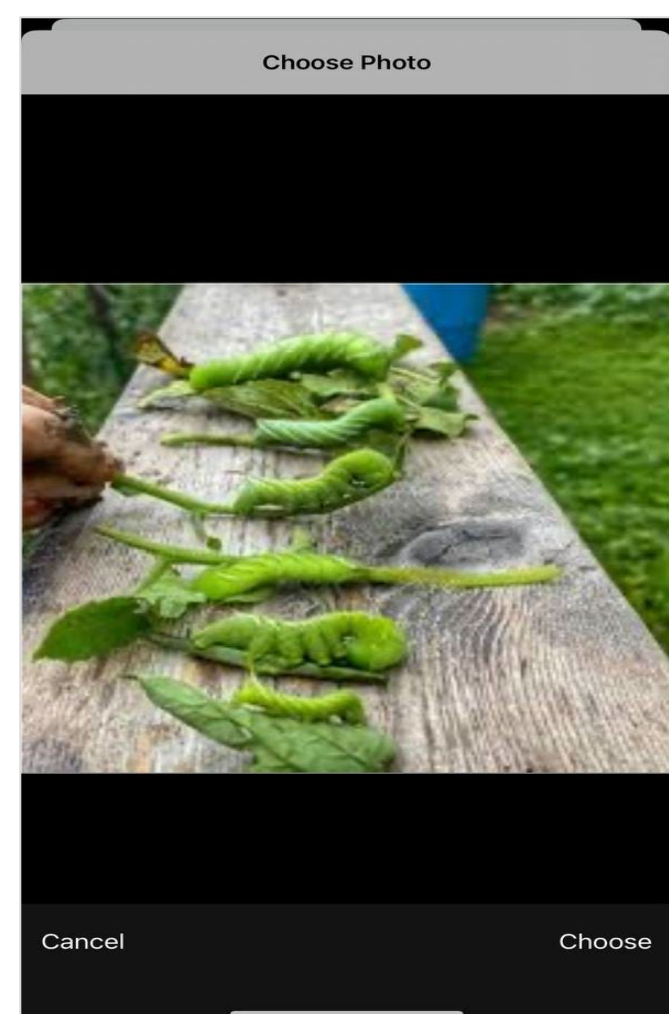
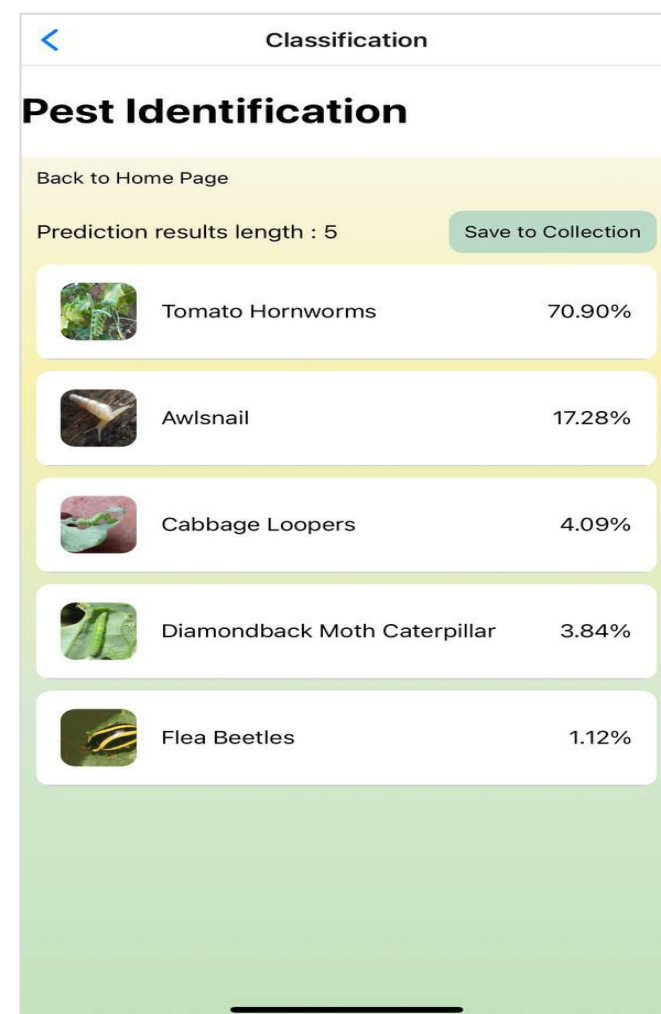
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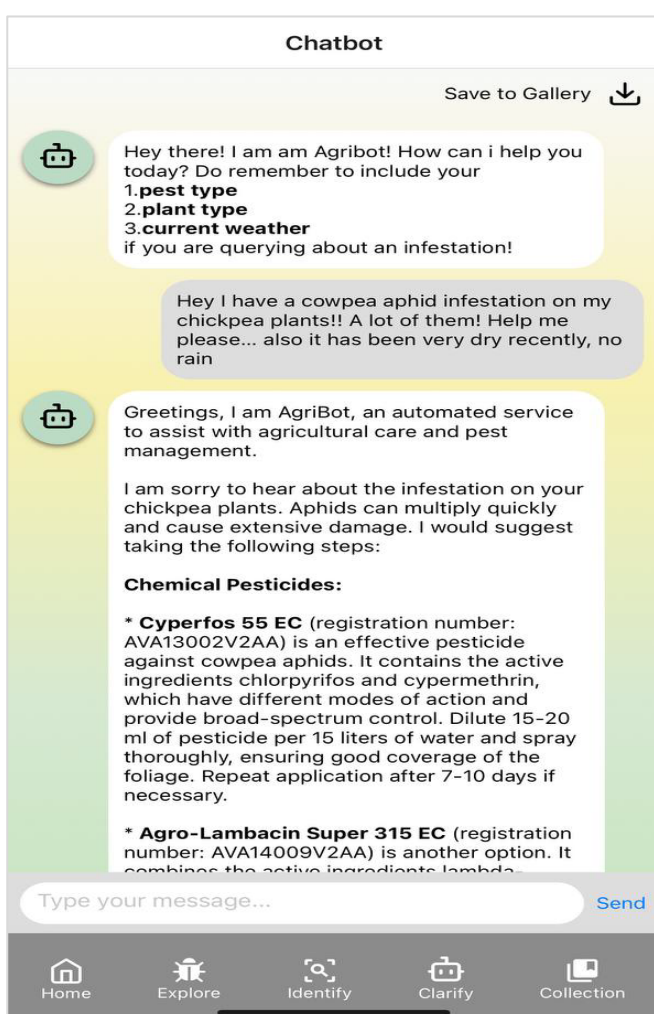
Project Objectives:

The objective of this project is to develop a mobile application to assist users in agricultural pest management. The application will employ a lightweight deep-learning solution, specifically a Convolutional Neural Network (CNN), trained to identify common agricultural pests in Singapore. Furthermore, a fine-tuned chatbot, based on the GPT-3.5 Large Language Model (LLM), is integrated to provide users with a personalised and context-specific feedback to target the pest of interest. This project aims to prioritise the accuracy of detecting the agricultural pests to ensure that users are provided with effective solutions and strategies to make informed decisions and safeguard their crops.

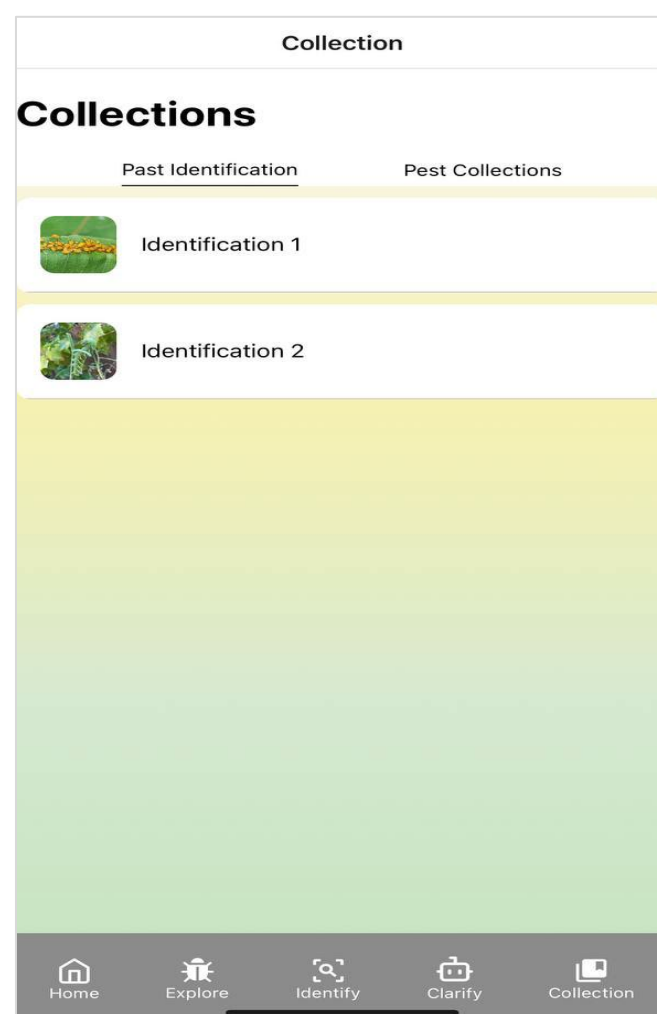
Key Features:



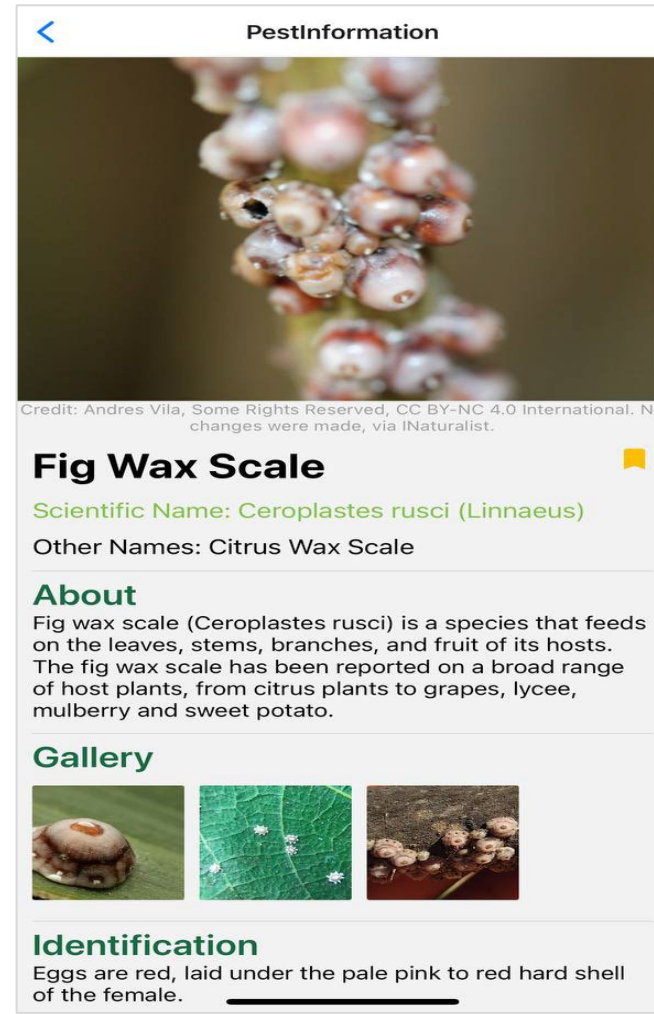
🔍 Pest Identification



🗣️ Chatbot Consultation



📁 Saved Identification



📄 Pest Information



🗨️ Pesticide Suggestion

Key Highlights:

- Creation of an Image Dataset comprising of Common Local Agricultural Pests
- Development and Fine-Tuning of a lightweight CNN model for Pest Image classification
- Utilisation of Prompt Engineering and Retrieval-Augmented Generation to refine the OpenAI GTP-3.5 turbo model
- Development of a Pesticide Database that offers locally approved products that are available in the market