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LEAF DISEASE DETECTION

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ABSTRACT

Well, for starters, leaf disease detection plays a crucial role in various industries, from agriculture to ecology and conservation. It helps us understand the leaf kingdom better, which in turn can lead to the development of new medicines, more efficient farming practices, and even the preservation of endangered species of leaves.

Keywords: Leaf Disease, TensorFlow, Image Recognition

I. INTRODUCTION

Leaf disease detection plays a crucial role in various industries, such as agriculture, pharmaceuticals, and ecology. Accurate detection of Leaf disease helps in improving crop yields, developing new medicines, and understanding the ecological balance of an ecosystem. For instance, in agriculture, identifying the right Leaf disease can help farmers optimize their crop management practices, leading to higher yields and reduced costs. In the pharmaceutical industry, accurate detection of Leaf disease can lead to the discovery of new medicines and treatments for various diseases.

II. METHODOLOGY

Start

Choose and extract a dataset

Split Images for training & testing

Pre-processing of Images

Train CNN Model

Validate against testing dataset

If Less Accuracy, modify split ratio

Inherit the model to Android App

End

III. MODELING AND ANALYSIS

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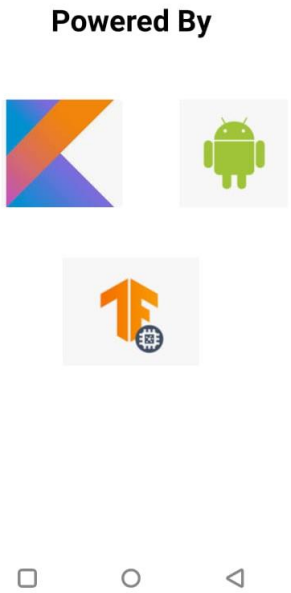

Figure 1: Start Screen

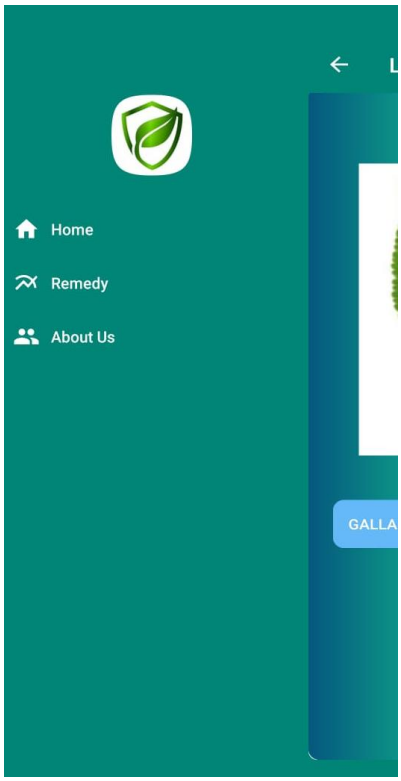

Figure 2: User Interface

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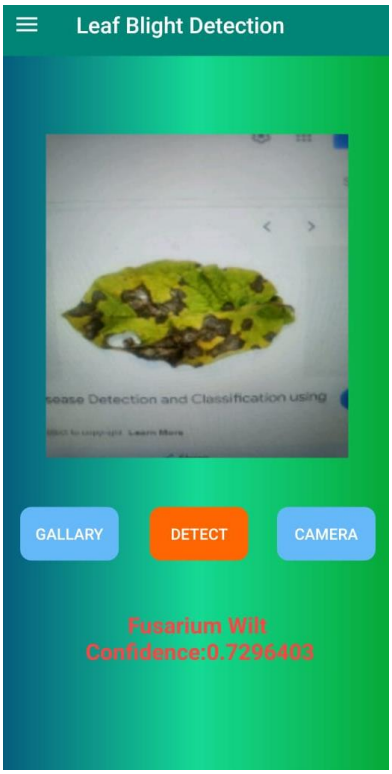

Figure 3: Model Implementation

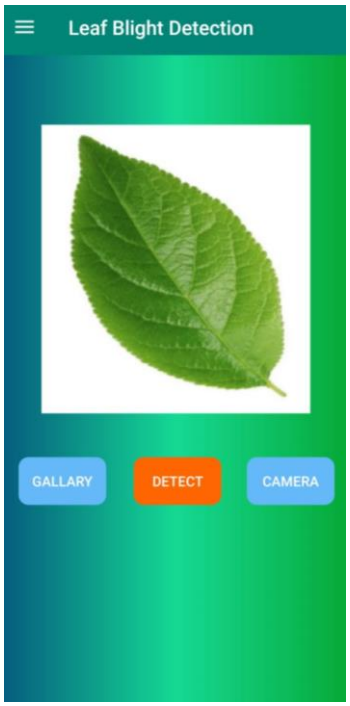

Figure 4: Leaf Set

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IV. RESULTS AND DISCUSSION

The goal of this project is to develop an android application that aids in the identification and classification of leaf diseases. The application will provide users with an easy-to-use interface where they can upload images or input relevant characteristics of a leaf and receive accurate information about its breed.

Key Features: Disease Identification: The core functionality of the android application will be the disease identification feature. Users will be able to upload images of leaf or enter specific traits such as leaf shape. The application will use advanced image processing techniques and machine learning algorithms to analyses the input and provide the most likely disease matches for the plant.

Leaf Disease Database: The android application will integrate a comprehensive database of leaf diseases. This database will contain information about various diseases, including their botanical names, common names, key characteristics. Users can access this database to learn more about specific breeds and explore related information

The Final System would ensure a fully functional and fully trained model which will be capable enough to detect various kinds of leaf diseases and provide information about them through uploading their photos to android application

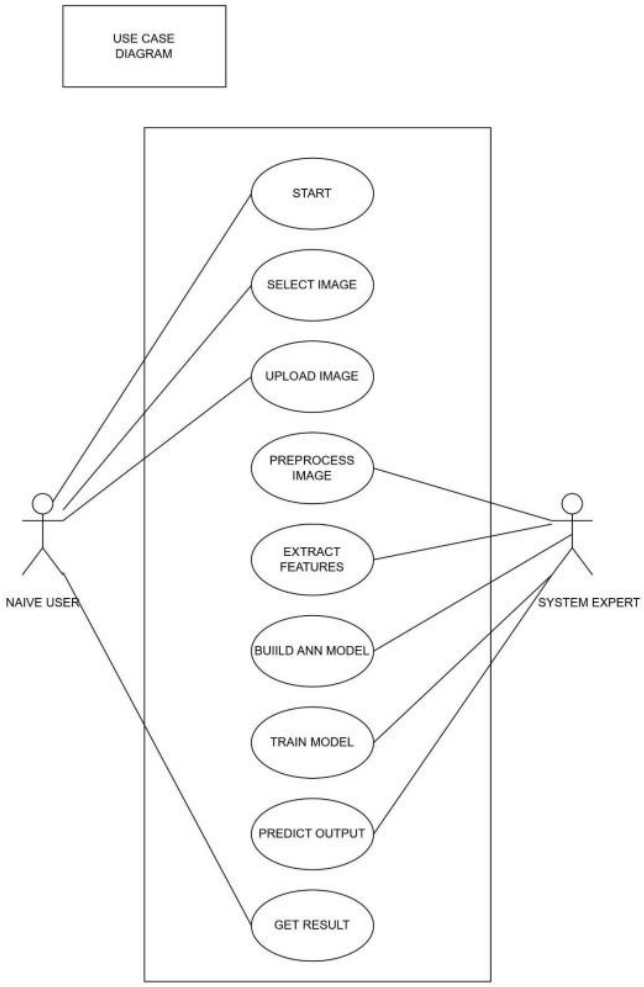

Figure 1: Use Case Diagram

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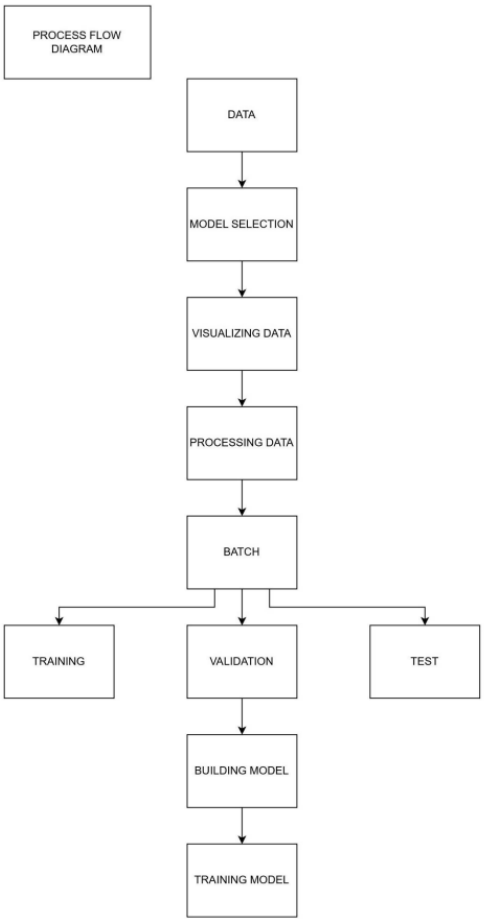

Figure 2: Process Flow Diagram

CONCLUSION

In conclusion, the Leaf disease detection project has been a significant endeavor aimed at leveraging technology to enhance our understanding of floral diversity and aid in the detection of various Leaf diseases. Through this project, we have achieved several important milestones and gained valuable insights:

1. Accurate Detection: Our Leaf disease detection system has demonstrated a commendable level of accuracy in classifying diverse Leaf diseases. The use of advanced machine learning algorithms and deep neural networks has enabled us to reliably distinguish between different Leaf varieties.

2. Robust Performance: The system has proven its robustness by successfully handling a wide range of challenges, including variations in lighting, background clutter, and image quality. This robustness ensures its applicability in real-world scenarios.

3. User-Friendly Interface: For practical usability, we have incorporated a user-friendly interface that allows users to easily upload Leaf images and receive disease detection results swiftly and intuitively.

4. Contribution to Botanical Research: Our project has contributed valuable data and insights to the field of botanical research. By classifying Leaf diseases with precision, we have assisted researchers, botanists, and horticulturists in their efforts to study and conserve floral biodiversity.

5. Future Directions: While we celebrate our achievements, we acknowledge that there is room for improvement and expansion. Future directions for this project include enhancing the system's efficiency, incorporating more Leaf diseases, and exploring the use of additional data sources to further refine our detection capabilities.

6. Collaboration and Outreach: Collaboration with experts, researchers, and Leaf enthusiasts has enriched our project. We look forward to continuing to collaborate and share our findings with the wider scientific and botanical communities

ACKNOWLEDGEMENTS

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