**PROJECT SYNOPSIS**

**TITLE**:

PLANT DISEASE DETECTION

**INTRODUCTION**:

Crop diseases are a major threat to food security, but their rapid identification remains difficult in many parts of the world due to the lack of the necessary infrastructure.

Getting affected by a disease is very common in plants due to various factors such as fertilizers, cultural practices followed, environmental conditions, etc. These diseases hurt agricultural yield and eventually the economy based on it.

Any technique or method to overcome this problem and getting a warning before the plants are infected would aid farmers to efficiently cultivate crops or plants, both qualitatively and quantitatively. Thus, disease detection in plants plays a very important role in agriculture.

The number of smartphone users in India was estimated to reach over 760 million in 2021, with the number of smartphone users worldwide forecasted to exceed to 3.8 billion users in 2021. The number of smartphone users worldwide is projected to amount to nearly 2.7 billion by 2019. This shows that most of the people in India use smartphone thereby, we developed an android application called Krish-e that will help farmers easily identify their crop diseases using their android device. Also, provision is provided so that with one click the farmer can access the government of India farmer’s portal and an agricultural website that provides latest advancements in the world of agriculture.

**PROJECT IMPLEMENTATION:**

We are using TensorFlow library (Machine Learning library) to detect plant disease. The farmers can use their android device to scan a particular plant leaf in our app called Krish-e which they suspect for having a plant disease. We have generated custom re trained TensorFlow models using the possible plant diseases.

**PROJECT BRIEFING:**

Here we are retraining a mobilenet\_0.50 model. The model is pre trained with common multi label classifications, but on top of it we are training it with various leaf diseases. We then analyse the plant diseases, symptoms etc and then generate proper measures to improve plant health. In our case here we will be adding three folders with label name apple cedar rust, peach bacterial spot, bell pepper bacterial spot (these are just plant disease names, so that we could classify each image based on plant diseases). We have put 20 pictures in each label.

**TEAM MEMBERS:**

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**REFERENCE:**

1. <https://colab.research.google.com/github/tensorflow/hub/blob/master/examples/colab/tf2_image_retraining.ipynb>
2. <https://medium.com/@kevalnagda/plant-disease-detector-ddd914687349>
3. <https://www.frontiersin.org/articles/10.3389/fpls.2016.01419/ful>