



# RECOGNIZING RICE DISEASE AND FEATURE BASED CLASSIFICATION OF RICE VARIETY

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# ABSTRACT

- Leaf disease detection requires a tremendous amount of effort, knowledge of plant diseases, and additional processing time. We have come up with an idea to predict the rice disease using machine learning algorithms, such as CNN
- Information of grain types and quality are required at several stages during grain handling operation, in food industries. So we have proposed a machine learning model that identifies the rice variety type and also provides information about nutrients available.

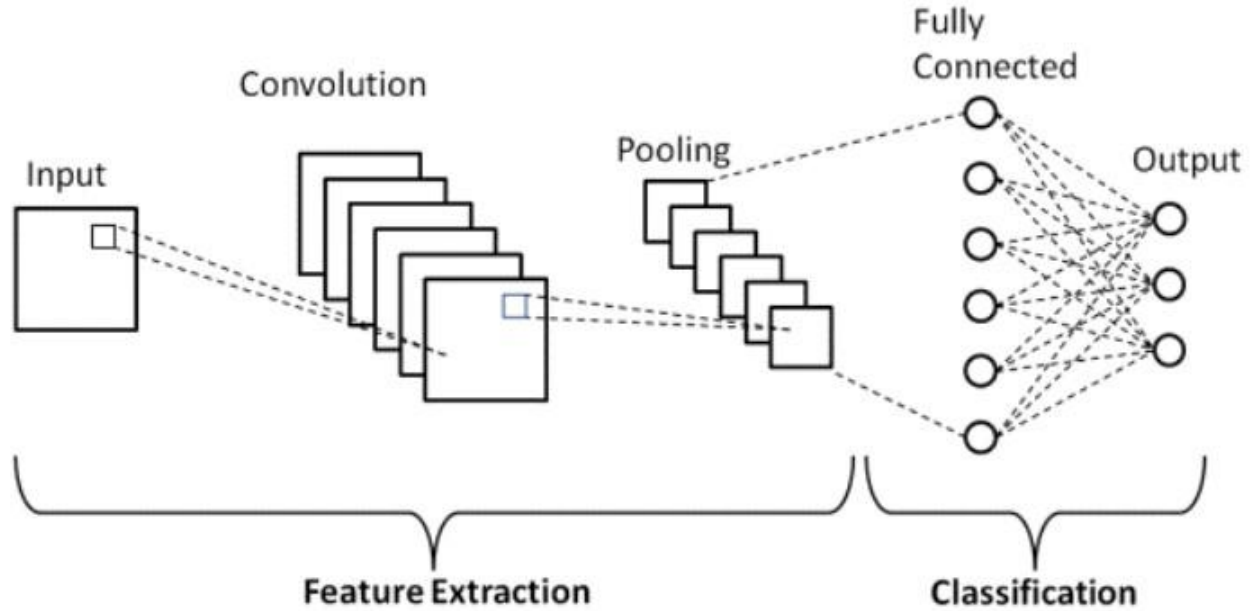
# INTRODUCTION



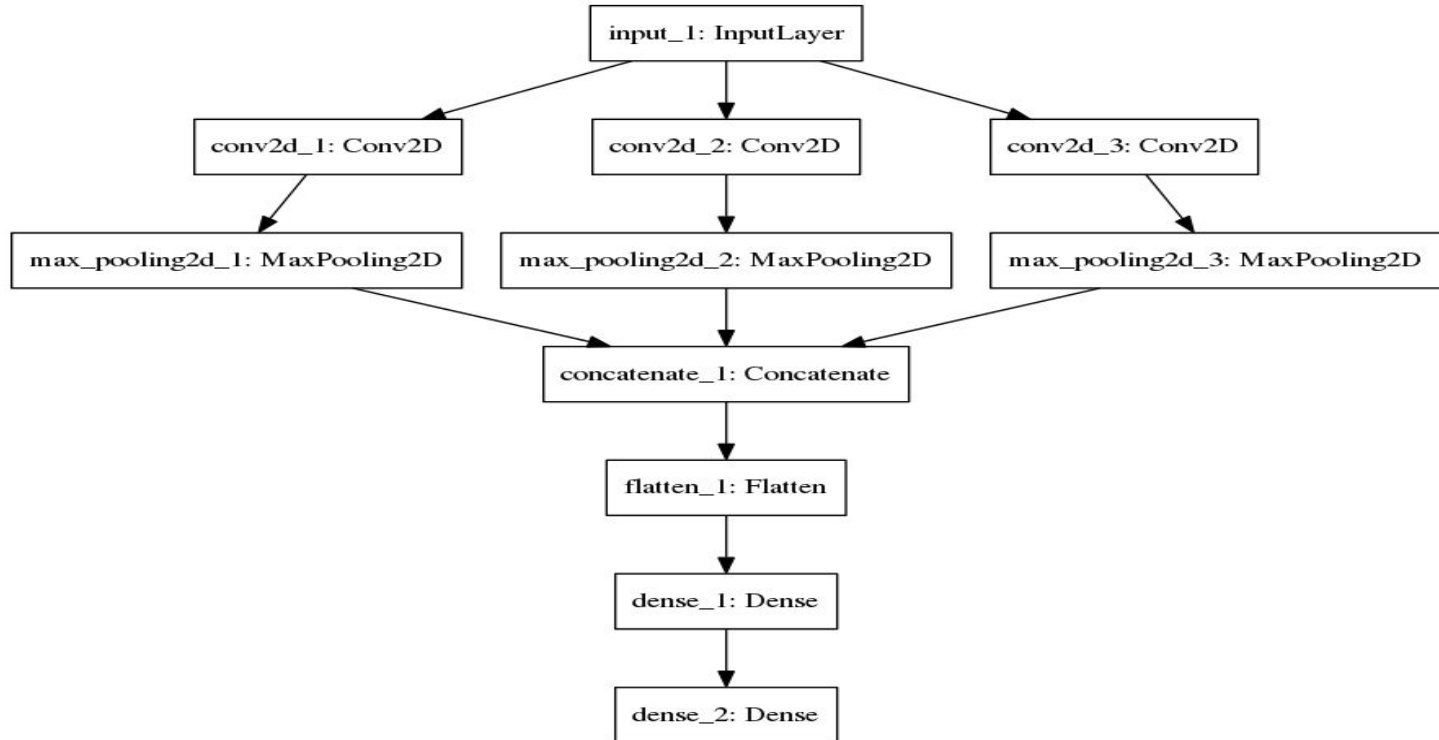
- A CNN is a Machine Learning algorithm which can take in an input image, assign weights to various objects in the image and be able to differentiate one from the other.
- CNN is designed to automatically and adaptively learn spatial hierarchies of features through backpropagation by using multiple building blocks, such as convolution layers, pooling layers, and fully connected layers.



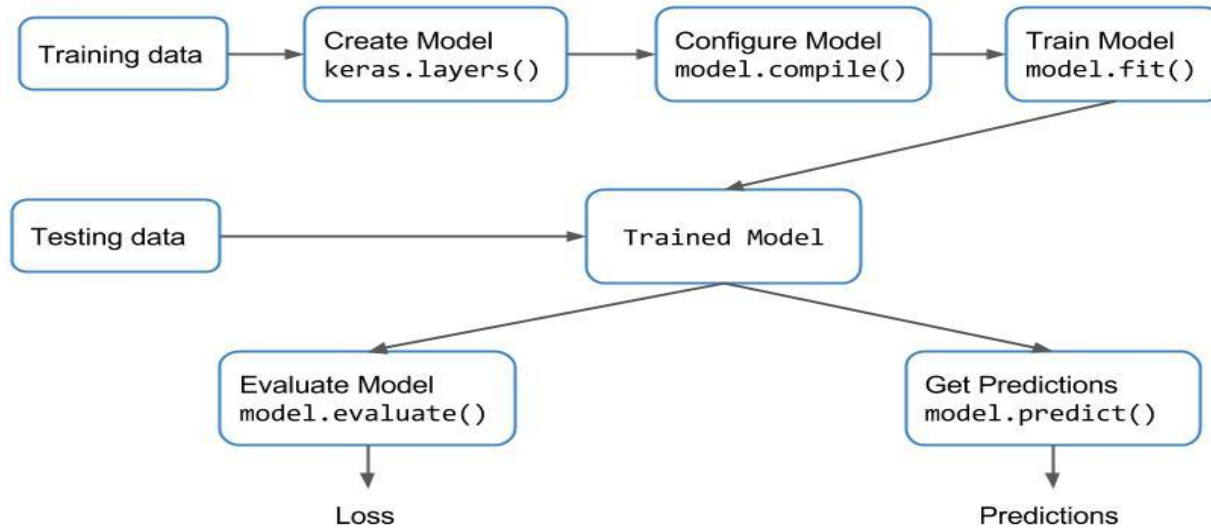
## CNN Architecture



# CNN Model



## Proposed model for module 1





## Image Segmentation and feature extraction

Image segmentation is a process by which we partition images into different regions. Whereas the contours are the continuous lines or curves that bound or cover the full boundary of an object in an image. And, here we will use an image segmentation technique called contours to extract the parts of an image.

Also contours are very much important in

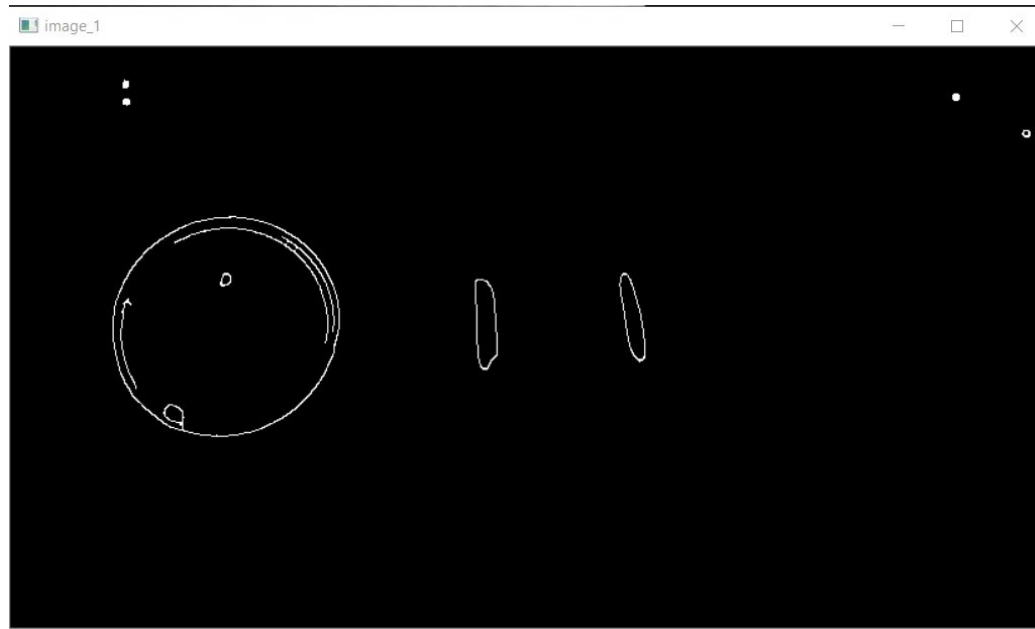
- Object detection
- Shape analysis



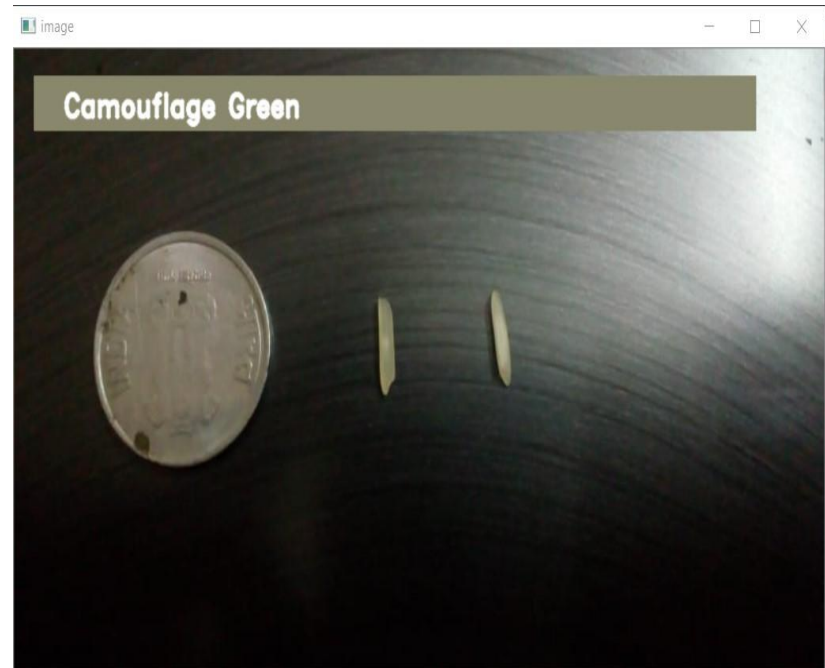
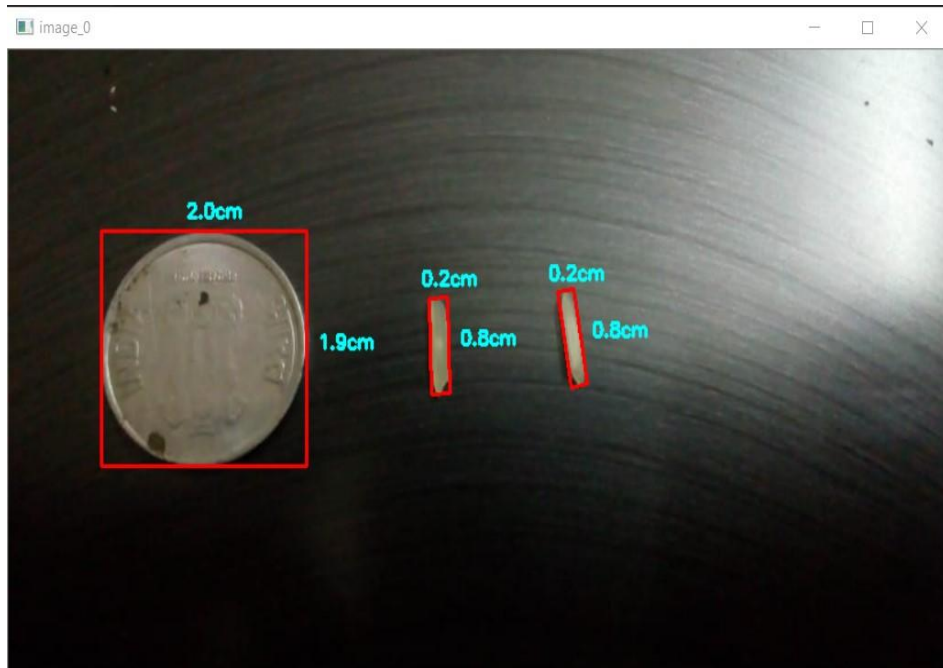
Input image



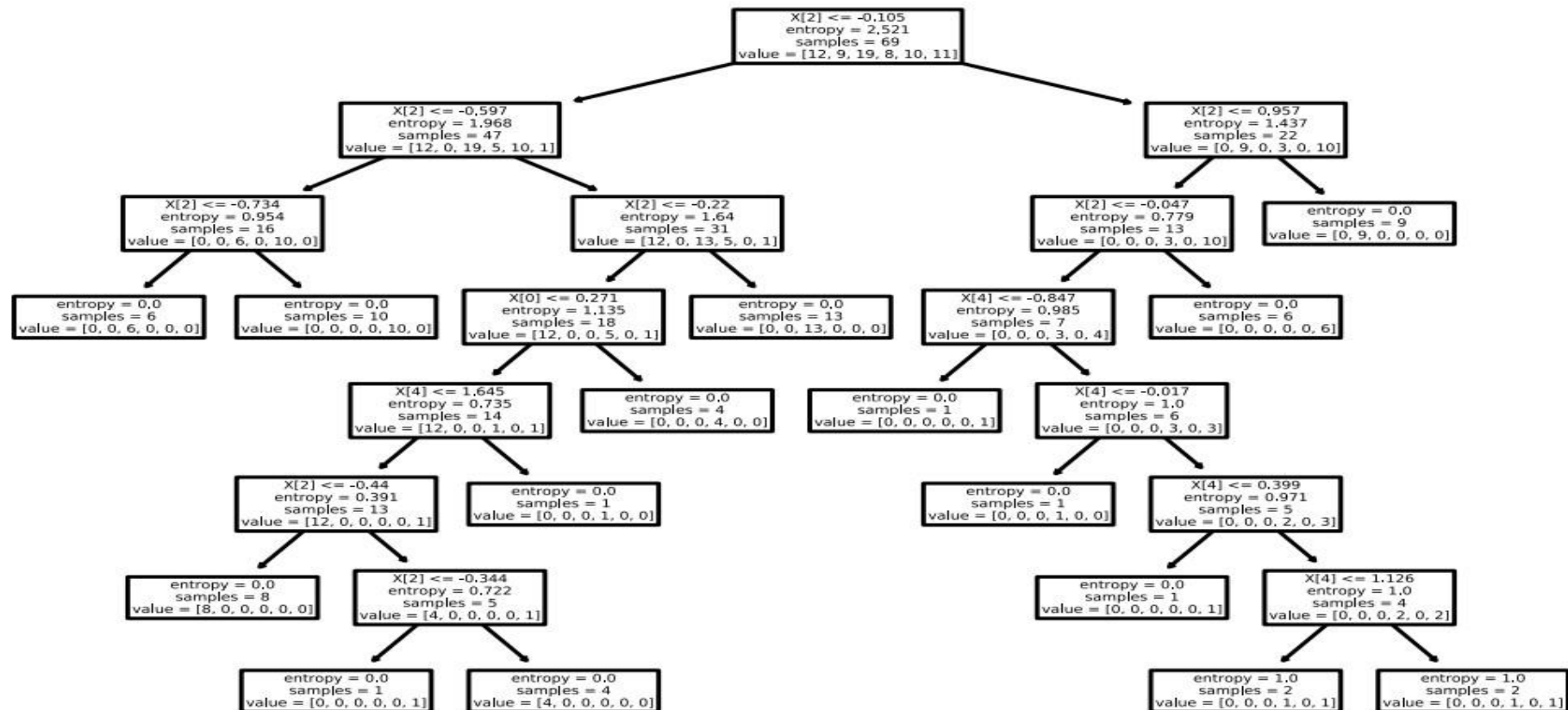
## Pre-processing the input image



## Feature extraction

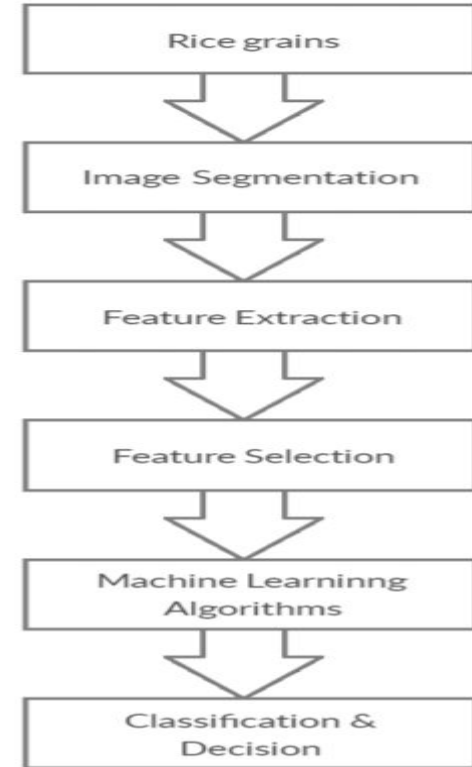


# Decision Tree Classifier

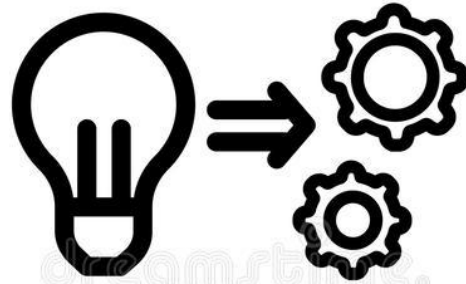


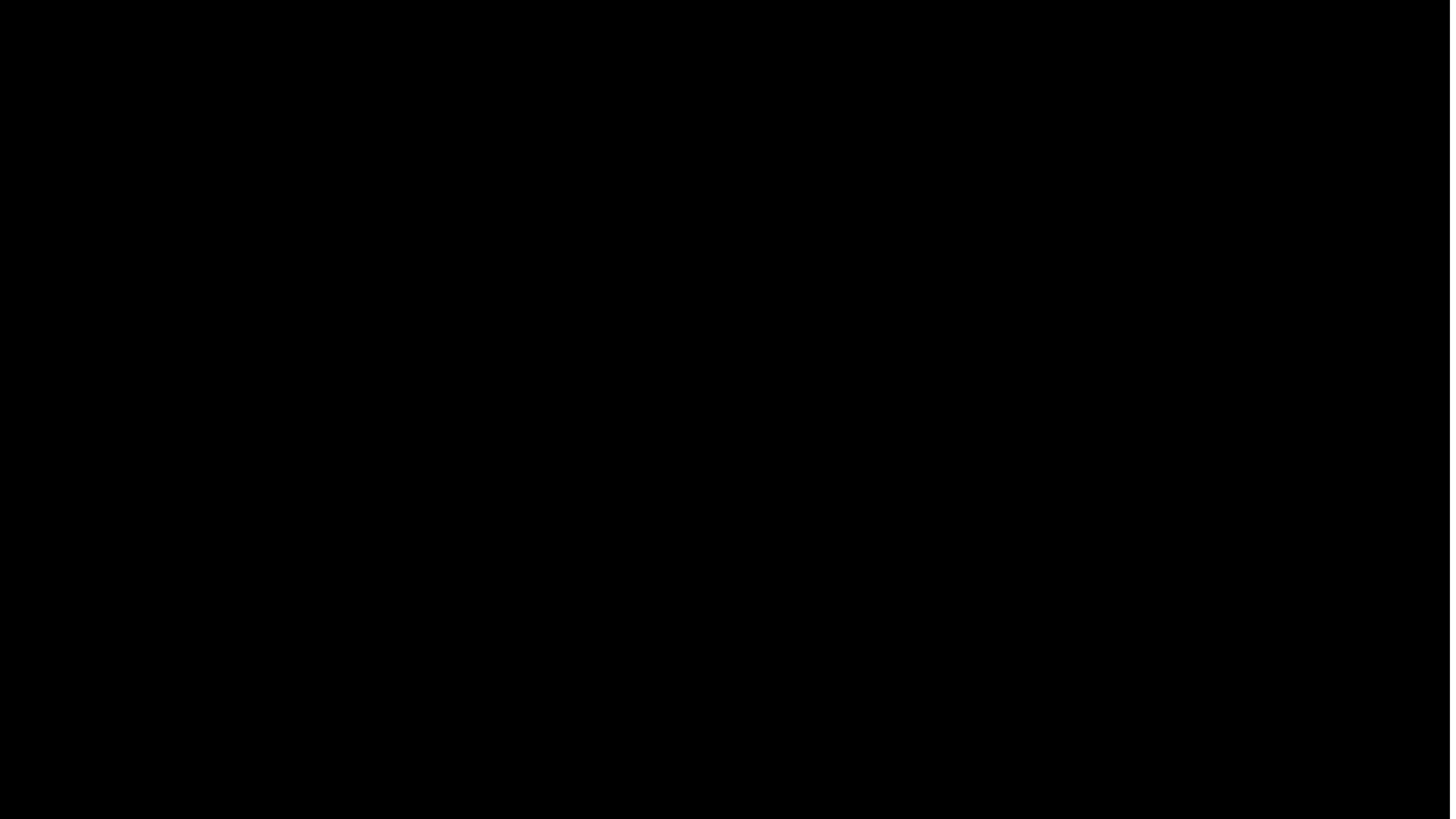


## Proposed Model for module 2



## IMPLEMENTATION







## FUTURE SCOPE

- Develop the project from prototype to a complete end use product.
- Larger set of data would be provided for training network.
- Develop the model to identify more diseases and stages of disease detected
- Colour features extracted directly or their derivative could improve the accuracy level
- Extracting more features from rice grain using image processing would increase accuracy





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# *Thank You*

*-- Batch 10*