# Pest Disease Detection
## Machine Learning

Honey Gadhiya[1]    Ishika Agarwal[2]    Nivedita Rao[3]    Pooja Langhnoda[4]

[1]Information and Communication Technology
School of Engineering and Applied Science

Project Presentation ,2017

## Brief Overview

- The primary purpose of the project is to identify whether a particular cotton leaf is diseased or not and if it is diseased, identification of the disease is done.
- We have considered three main diseases - Alternaria Macrospora, Bacterial Blight and Grey Mildew as different classes.
- The training data are images taken from web which are uploaded by ordinary humans.
- Assuming that the images are taken in uncontrolled environment, many difficulties are faced, making the machine- learning algorithm less effective.
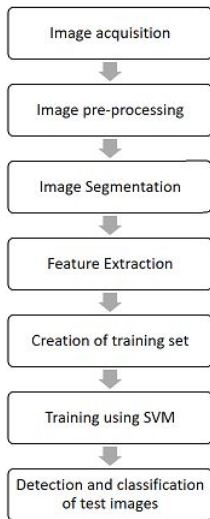
# Basic Approach



Image acquisition

⬇

Image pre-processing

⬇

Image Segmentation

⬇

Feature Extraction

⬇

Creation of training set

⬇

Training using SVM

⬇

Detection and classification of test images
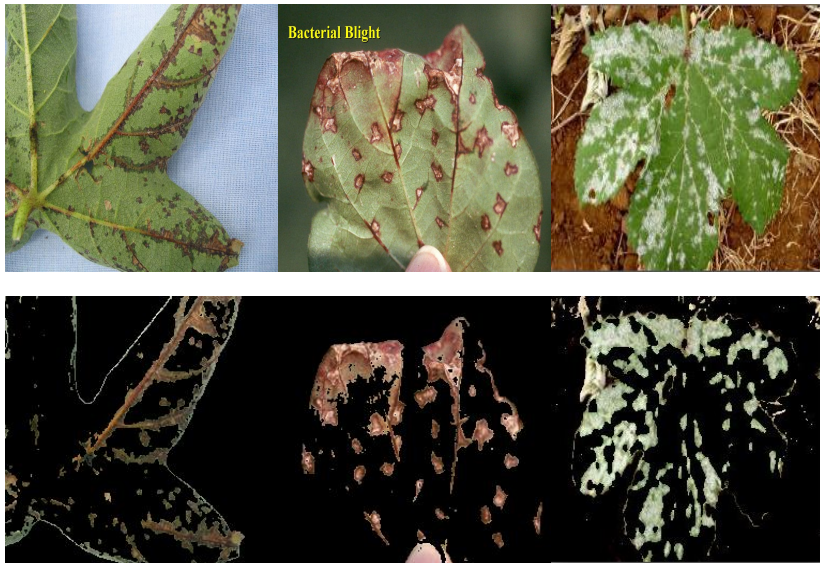
# Image Pre-Processing
Image clustering
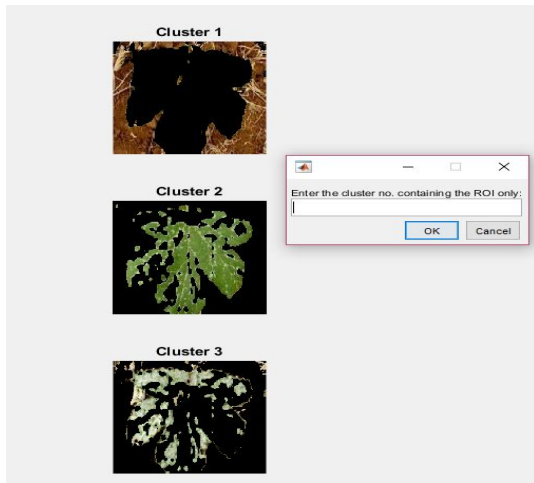


Figure: Clustered images

# Classification

```
valyrian =

  Columns 1 through 15

    3    1    1    1    1    1    1    1    1    1    1    1    3    1    1

  Columns 16 through 30

    2    2    2    2    2    2    2    1    2    2    2    2    2    2    2

  Columns 31 through 43

    3    2    3    3    3    2    1    1    3    3    3    2    3

    .
```

Figure: Labeled Output

# References I

📄 Aditya Parikh, Mehul S. Raval,Chandrasinh Parmar and Sanjay Chaudhary
*Disease Detection and Severity Estimation in Cotton Plant from Unconstrained Images*.
IEEE, 2016.

📄 Shayan Hati,Sajeevan G.
Plant Recognition from Leaf Image through Artificial Neural Network.
*IJCA Volume 62 No.17, January 2013.*

📄 Xiaodong Zheng,Xiaojie Wang.
Leaf Vein Extraction Based on Gray-scale Morphology.
*MECS, December 2010.*

Thank You