# A REVIEW OFTHEORETICALLITERATURE



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# 1.Abstract:

The field of agriculture is in a great threat this includesthe diseases that attack the plant leaf. Our system finds thearea of leaf that has been affected and also the disease thatattacked the leaf. This is achieved by using Image Processing;there are systems that predict the diseases in the leaf. Oursystem uses K-Medoid clustering and Random Forestalgorithm to produce more accuracy in the detection ofdisease in the leaf. The image is first pre-processed and thenthe clustering method is applied to find the affected area ofthe leaf. This is then processed to fetch 13 characters likeMean, SD, Entropy, RMS, Variance, Smoothness, Kurtosis,Skewness, IDM, Contrast, Correlation, Energy andHomogeneity through this we will measure the accuracy andfind thedisease.

# 2.Introduction :

Artificial intelligence has a huge impact in all IndustrialSectors.Lately,ArtificialIntelligence(AI)hasbeenprogressing at an outstanding speed. AI accomplished solvingnumerous problems and saving a profitable resource byminimizing environmental deterioration. Artificial Intelligenceismakingarevolutioninagriculturebyreplacingtraditional

methods by using methods that are more efficient andhelping the world to become a better place . Agriculture isthe principal foundation of subsistence for about 58% ofIndia's population. The population is expanding enormouslywith this expansion the interest of food and business islikewise expanding. Intervening of AI in Agriculture is servingfarmers to recover their farming efficiency and diminishenvironmental hostile influences . Disease infection is themain drawback of Agriculture. Due to this drawback, theQuality and Quantity of agriculture products are degraded .To identify and detect the disease on agriculture product, theAI technique is introduced. In this paper, we are presenting asurvey for application of artificial intelligence in detection ofdiseasesinagriculture.

# 3.LiteratureSurvey:

## A.DeepLearninginComputer Vision:

Deep learning in computer vision has seen significantadvancements, especially with the creation of the ImageNetdataset and the ILSVRCchallenge. ImageNet is a populardataset for pre-training deep learning models, which iscurrently the conventional way of handling computer visionproblems with lack of data. ImageNet aims to populate themajority of the 80,000 synsets of WordNetwith an averageof500–1000cleanandfullresolutionimages.Sinceits

beginning, several deep convolutional neural networks havebeen designed to tackle the challenge. AlexNethas 5convolutional layers, whereas the VGGnetwork has 19arXiv:2204.11340v1 [cs.LG] 24 Apr 2022 layers. Theintroduction of ResNettook care of the Vanishing/Explodinggradient problem using residual connections. MobileNetismindful of the restricted resources and is designed for mobileand embedded vision applications. EfficientNetproposes amodel scaling method that uses a highly effective compoundcoefficienttoscaleupCNNsinamorestructuredmanner.

## B. FertilizerRecommendation

A lot of research has been done in fertilizerrecommendationandamajorityofthemusetheN,P,K, pHvalues of soil sometimes in addition with depth,temperature, weather, location, precipitation. The usualapproach is to use rule based classification, but someapproachesalso use clustering on fertilizer data using K-MeansandRandom Forestsforrecommendation

## C. InterpretabilityinDeep:

Learning The LIMEapproach is a simple interpretabilitytechnique which uses a local linear regression surrogate forthe original model. The linear model is trained on originalmodel predictions on masked versions of the image. Thescores for the image segments are based on theircorresponding weights. Positive and higher scoring segmentsareimportanttowardsthepredictedclass,whilethelo

wer

scoring ones hurt the confidence of the model. The GradCAMuses the average of gradients at the last convolutional layerof a CNN-based model to weight the activation maps at thatlayer, and performs a linear combination to find the postiveyinfluence regions for a particular class. This provides a coarseheatmapofimportantregionstowardsaprediction.

# 4.Conclusion:

Present review study summarize the differentapplications of artificial intelligence in agriculturesector. The main motive of this study was to brief theapplications and available techniques of artificialintelligence to solve the problems of farmers in gettingthe required yield. The paper also highlights thedifferent literatures, which reflects variousmethodologies to detect the diseases in crops. Fromthe literature, it is concluded that artificial intelligenceis a great tool for a nation's agronomics. Hence, futureresearchers should organize a proper dataset coveringall arena of agriculture and enhance the availabletechnologies to increase the productivity of primarysectors.

# 5.References:

[1]  Tanha Talaviya, Dhara Shah, Nivedita Patel, Manan Shah,"Implementation of artificial intelligence in agriculture foroptimisation of irrigation and application of pesticides andherbicides"Volume 4,2020,Pages58-73

[2]  AnuragSaxena,TruptimayeeSunaandDipankarSaha Regi,"ApplicationofArtificialIntelligenceinIndian Agriculture"2020

[3]  Nilay Ganatra and Atul Patel, "A Survey on DiseasesDetectionandClassificationofAgricultureProducts usingImageProcessingandMachineLearning",Internationa l JournalofComputerApplications(0975 –8887)Volume180 –No.13,January 2018

[4]  Ngozi Clara Eli-Chukwu, "Applications of ArtificialIntelligenceinAgriculture:AReview",Engineer ing, Technology & Applied Science Research Vol. 9, No. 4, 2019,4377-4383

[5]  Dr.K.Thangadurai, K.Padmavathi, "Computer VisionimageEnhancement For Plant Leaves Disease Detection", 2014World Congress on Computing and CommunicationTechnologies.