PROBLEM STATEMENT

Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques. An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases. Application of the benefits of modern computing technology to improve the efficiency of agricultural fields is inevitable with growing concerns about increasing world population and limited food resources. Computing technology is crucial not only to industries related to food production but also to environmentalists and other related authorities. Implementing machine learning methods such as deep neural networks on agricultural data has gained immense attention in recent years. One of the most important problems is automatic classification of plant species based on their types. Automatic plant type identification process could offer a great help for application of pesticides, fertilization and harvesting of different species on-time in order to improve the production processes of food and drug industries. In this paper, we propose a Convolutional Neural Network (CNN) architecture to classify the type of plants from the image sequences collected from smart agro-stations. First challenges introduced by illumination changes and deblurring are eliminated with some preprocessing steps. Following the preprocessing step, Convolutional Neural Network architecture is employed to extract the features of images.