# Plant Leaf Recognition Using Deep Learning

**Authors :** Aadhya Kaul, Gautam Manocha, Preeti Nagrath

**Abstract :** Our environment comprises of a wide variety of plants that are similar to each other and sometimes the similarity between the plants makes the identification process tedious thus increasing the workload of the botanist all over the world. Now all the botanists cannot be accessible all the time for such laborious plant identification; therefore, there is an urge for a quick classification model. Also, along with the identification of the plants, it is also necessary to classify the plant as healthy or not as for a good lifestyle, humans require good food and this food comes from healthy plants. A large number of techniques have been applied to classify the plants as healthy or diseased in order to provide the solution. This paper proposes one such method known as anomaly detection using autoencoders using a set of collections of leaves. In this method, an autoencoder model is built using Keras and then the reconstruction of the original images of the leaves is done and the threshold loss is found in order to classify the plant leaves as healthy or diseased. A dataset of plant leaves is considered to judge the reconstructed performance by convolutional autoencoders and the average accuracy obtained is 71.55% for the purpose.

**Keywords :** convolutional autoencoder, anomaly detection, web application, FLASK

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