**Title:** A comparison between two CNN models to classify Potato leaf disease

**Contribution:**

1. Providing own feature extraction method
2. Developing 1 or 2 CNN models to classify Potato leaf disease
3. Comparing with the developed models
4. Comparing with an existing model

**Proposed Methodology:**

The agricultural sector is often affected because of various diseases of the plants. In this work, I am going to classify potato leaf disease using the CNN model. I have chosen the potato leaf disease classification because of the availability of the dataset [[Potato Leaf Disease Dataset -Kaggle](https://www.kaggle.com/datasets/muhammadardiputra/potato-leaf-disease-dataset?resource=download)].

In this project, the training data set has 900 images, and the valid set has 300 images. We have three classes of images such as potato early blight, late blight, and healthy leaf images.

Instead of using the ImageDataGenerator function to generate features, I am going to read the images and convert “BGR” to “RGB”. After that, I will resize the images to 64X64. Then I am going to convert the class vector to a binary class matrix.

For this purpose, I plan to build two CNN models with three and four max-pooling and convolution layer layers. Relu will be used in this model as an activation function. For now, I plan to run the models 100 epochs, however, I will finalize by hyper-tuning. I am going to compare these models by accuracy and loss. Also, I will compare the accuracy with some existing models.

Diagram

Description automatically generated

Fig 1: Proposed Methodology