

Crop Leaf Disease

An Image Recognition Using Computer Vision

Raihan Rafif
DATA SCIENTIST



List of Content

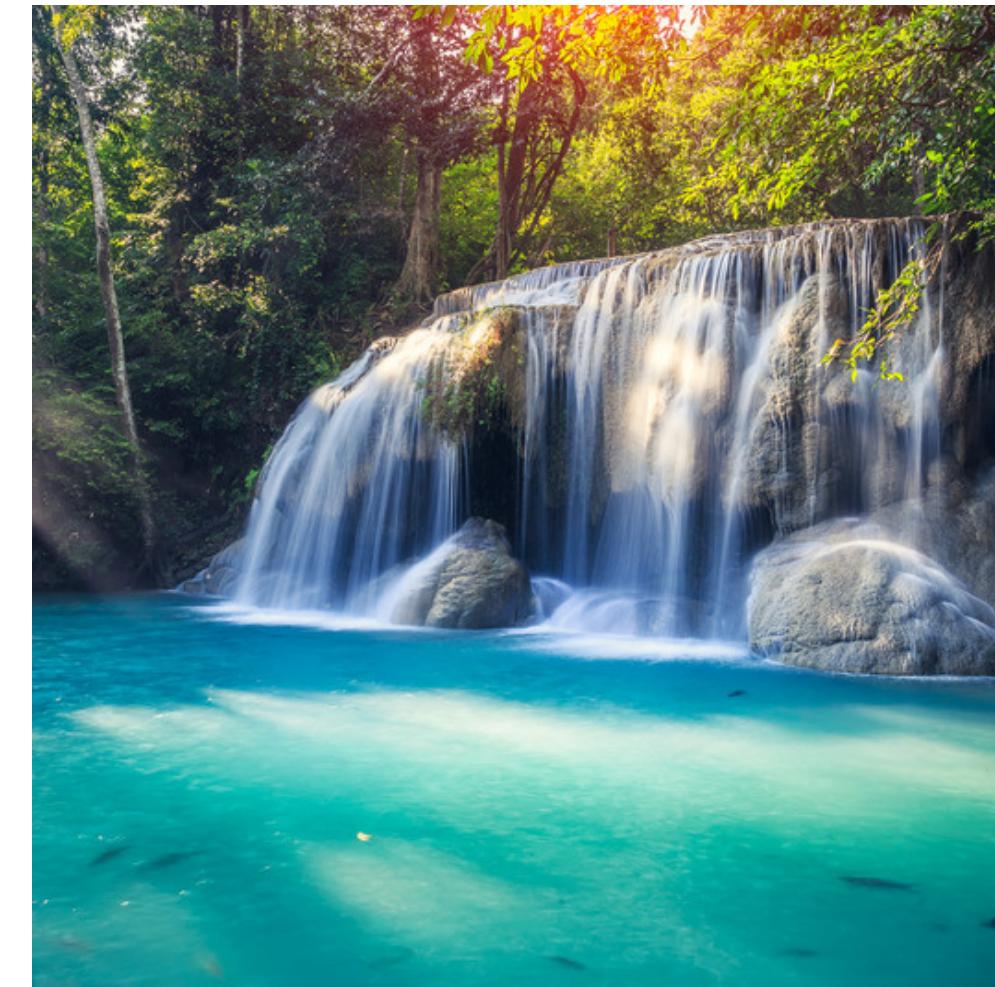
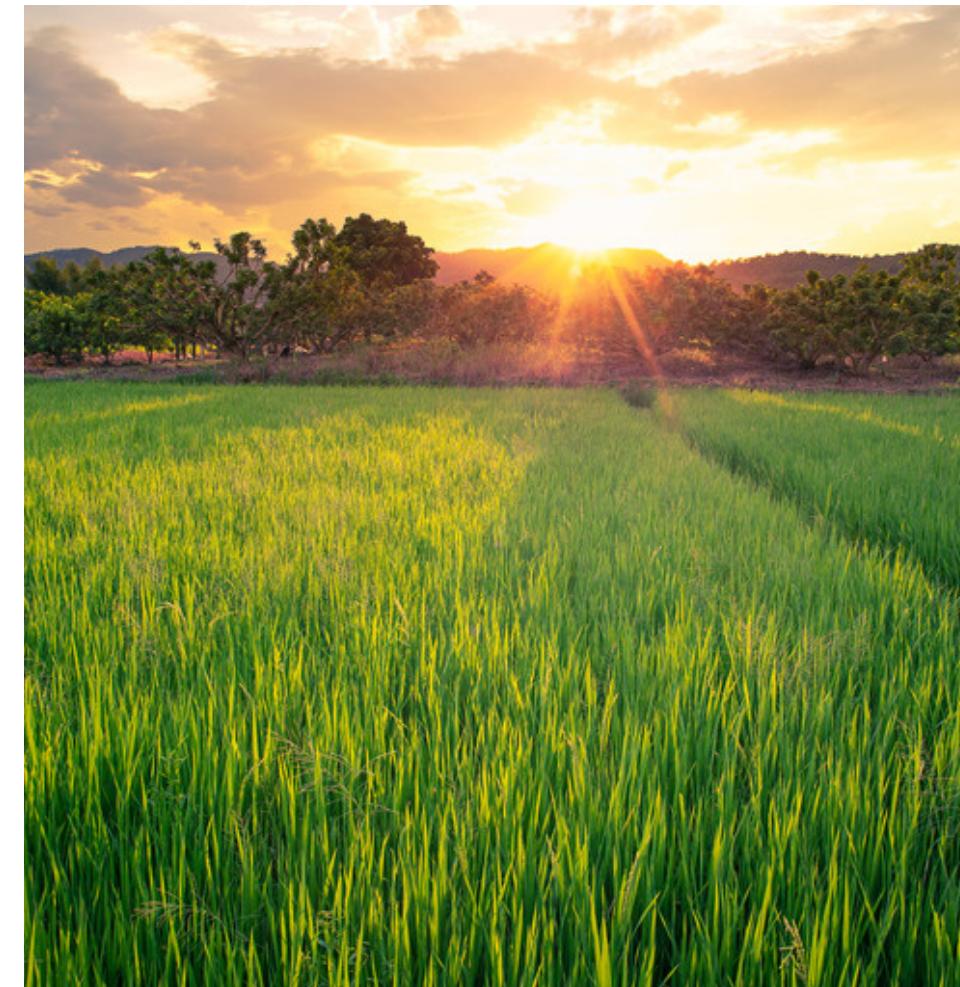
-  Problem Statement
-  The Goals
-  We'll Get to Know The Data
-  Modeling report
-  Summaries



Introduction & Problem Statement



Agriculture is one of the main sources of food supply throughout the world. One of the problems often experienced by farmers is plant disease. One way that can be done to carry out fast handling is early identification of diseases that attack the plant.



One of the algorithms in deep learning is a convolutional neural network or CNN. CNN is a type of artificial neural network, which is widely used for image/object recognition and classification. Initial identification can be done by taking pictures of leaves affected by the disease, then deep learning computing is carried out to create models that can later be used to identify diseases in leaves instantly through images.

"Strengthening food reserves as supplies in the future"

The Goal That Have to be Achieved

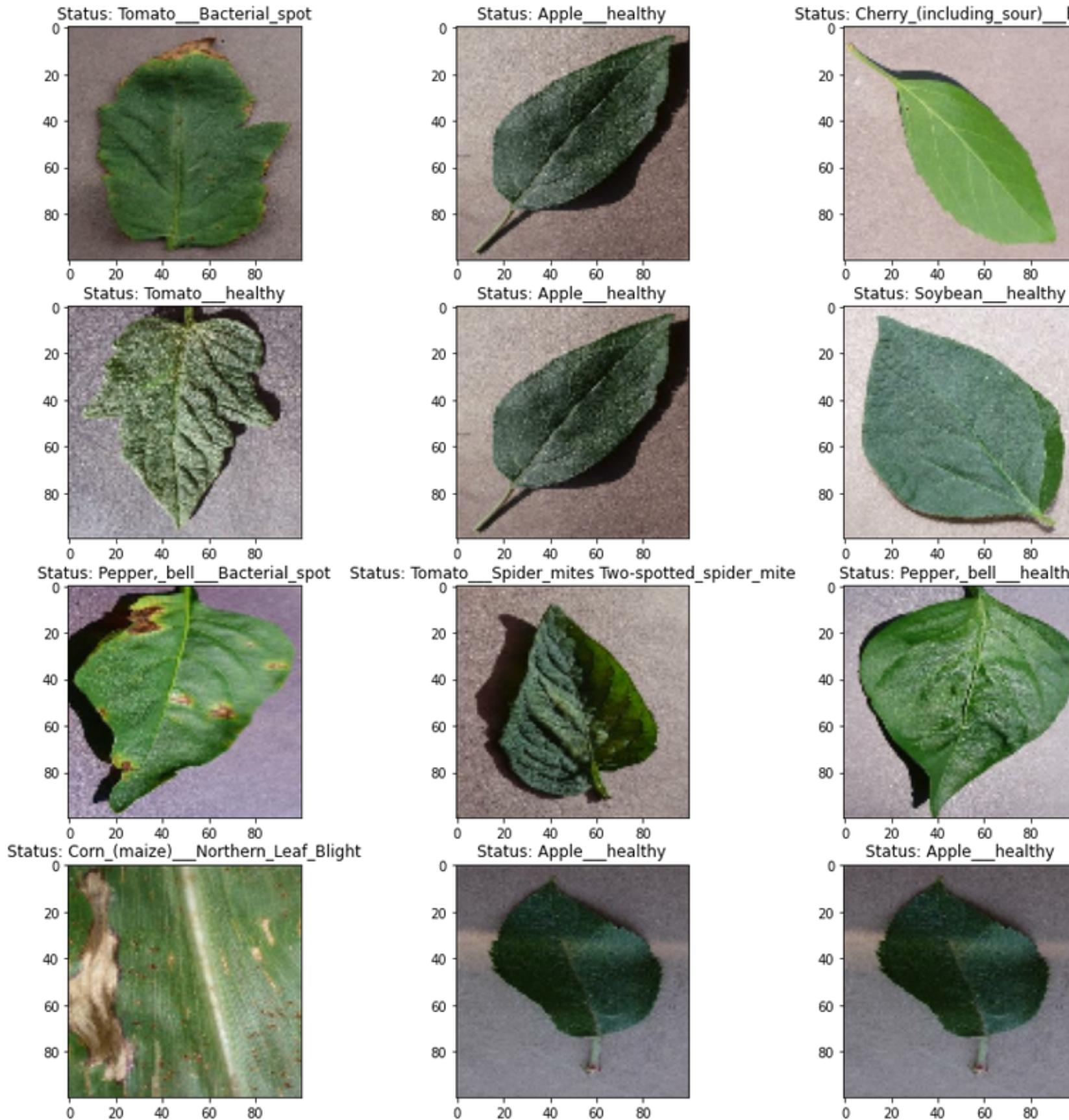


The main objective to be achieved this time was generating and optimizing the CNN model for the identification of diseases that attack the leaves of agricultural plants through image recognition.



We'll Get to Know The Data

Data Dictionary

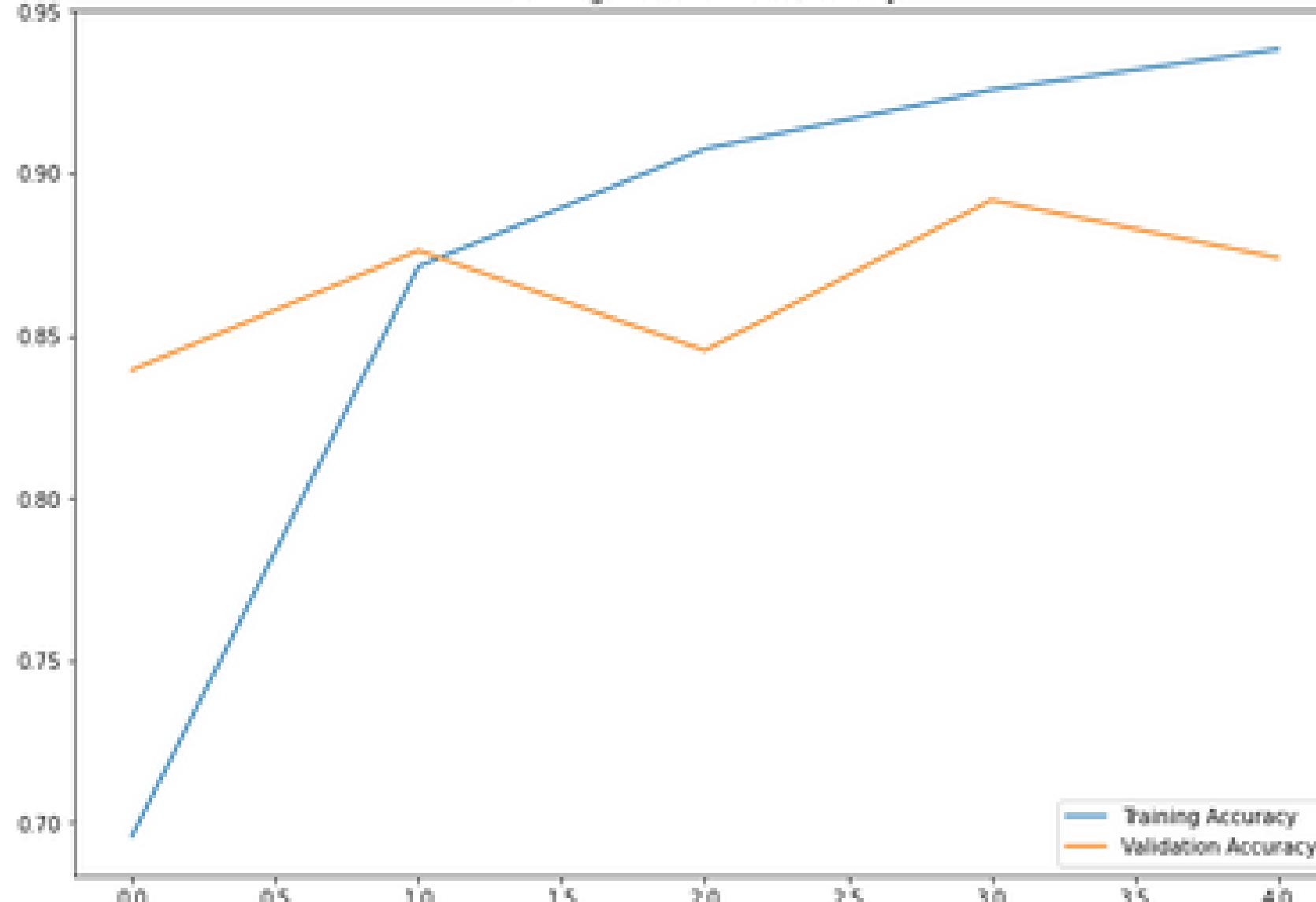


This dataset contains 70,295 images from the crop above to generate the CNN model for leaf disease prediction.

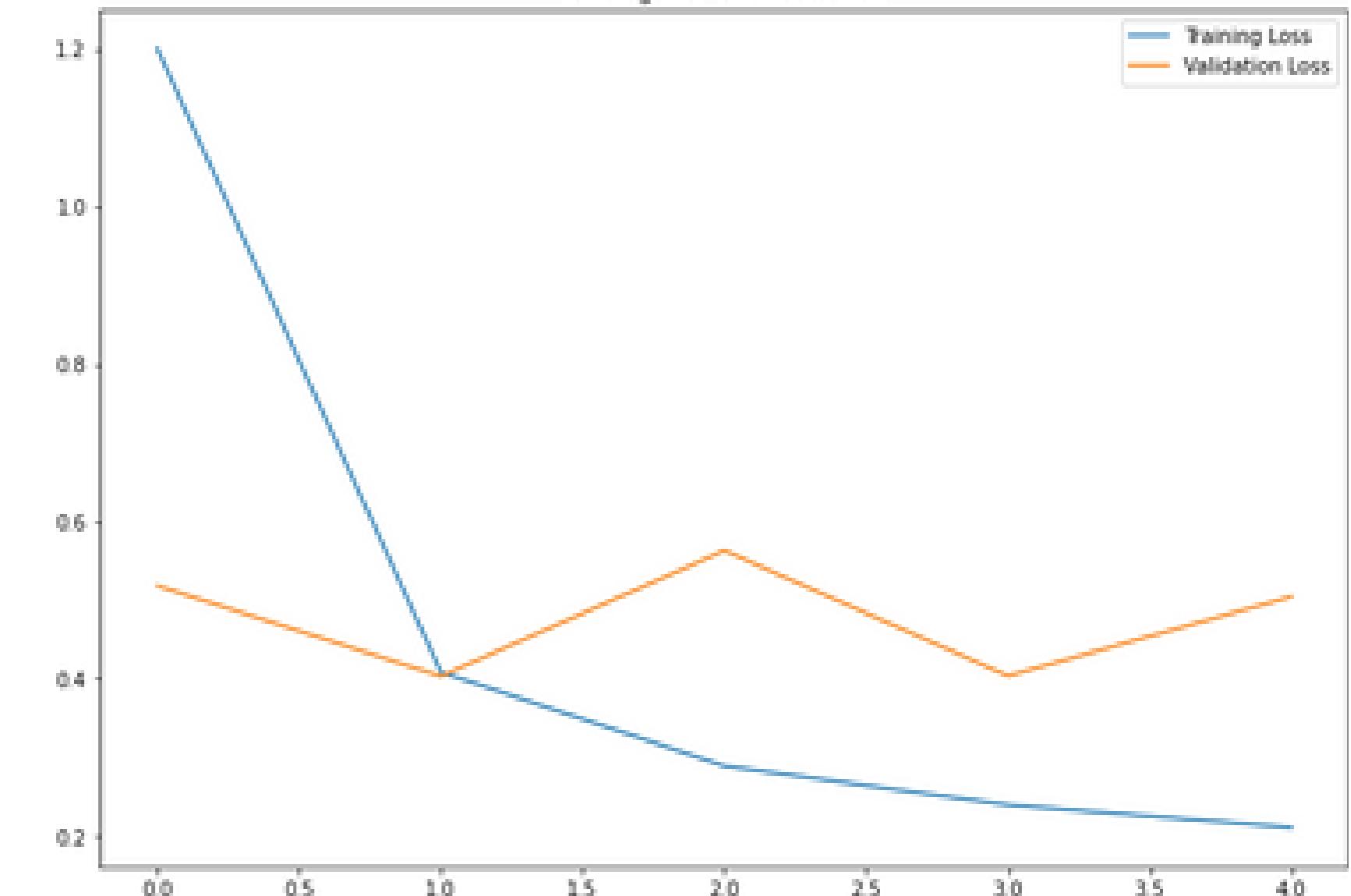


Modeling Report

Training and Validation Accuracy



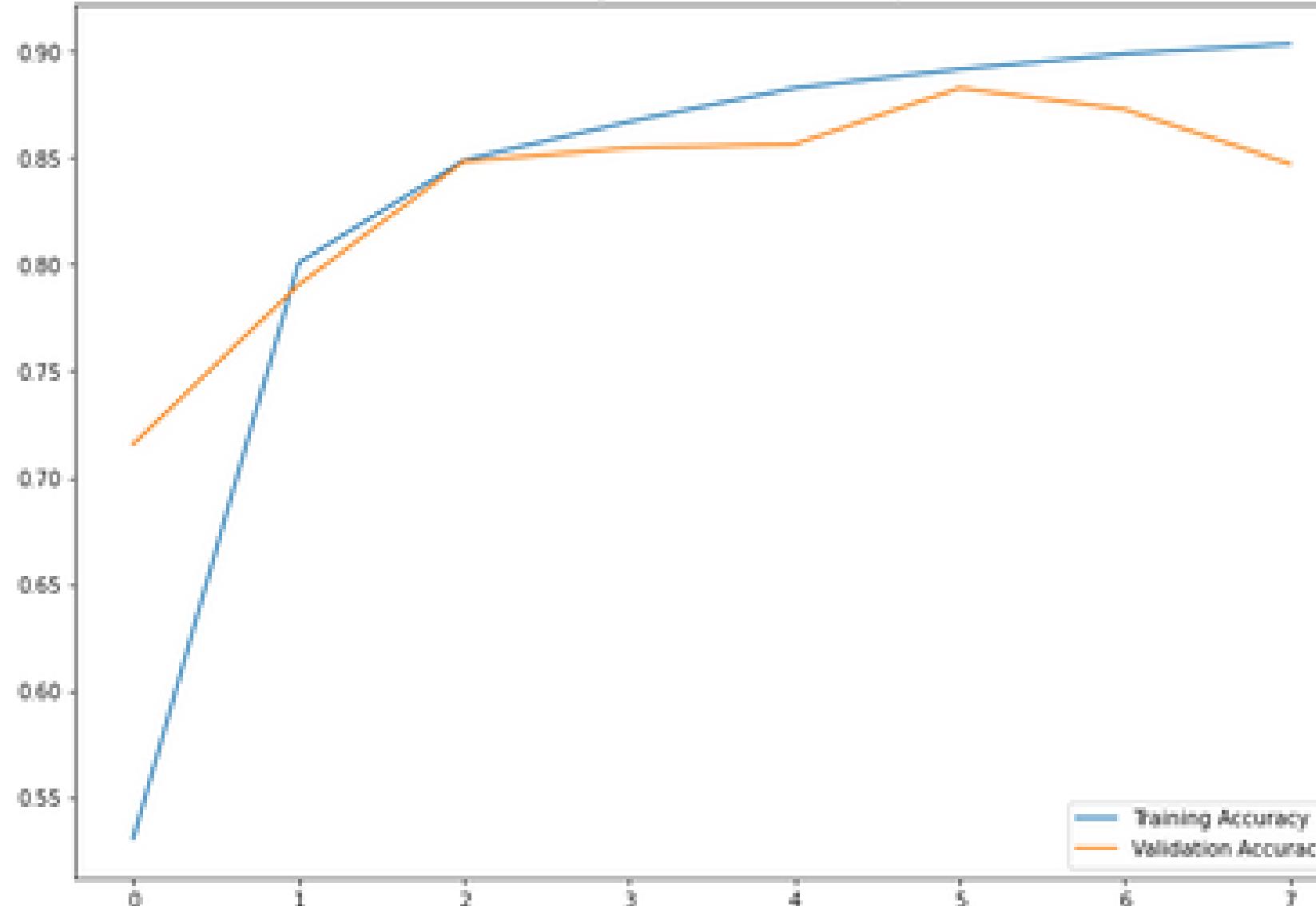
Training and Validation Loss



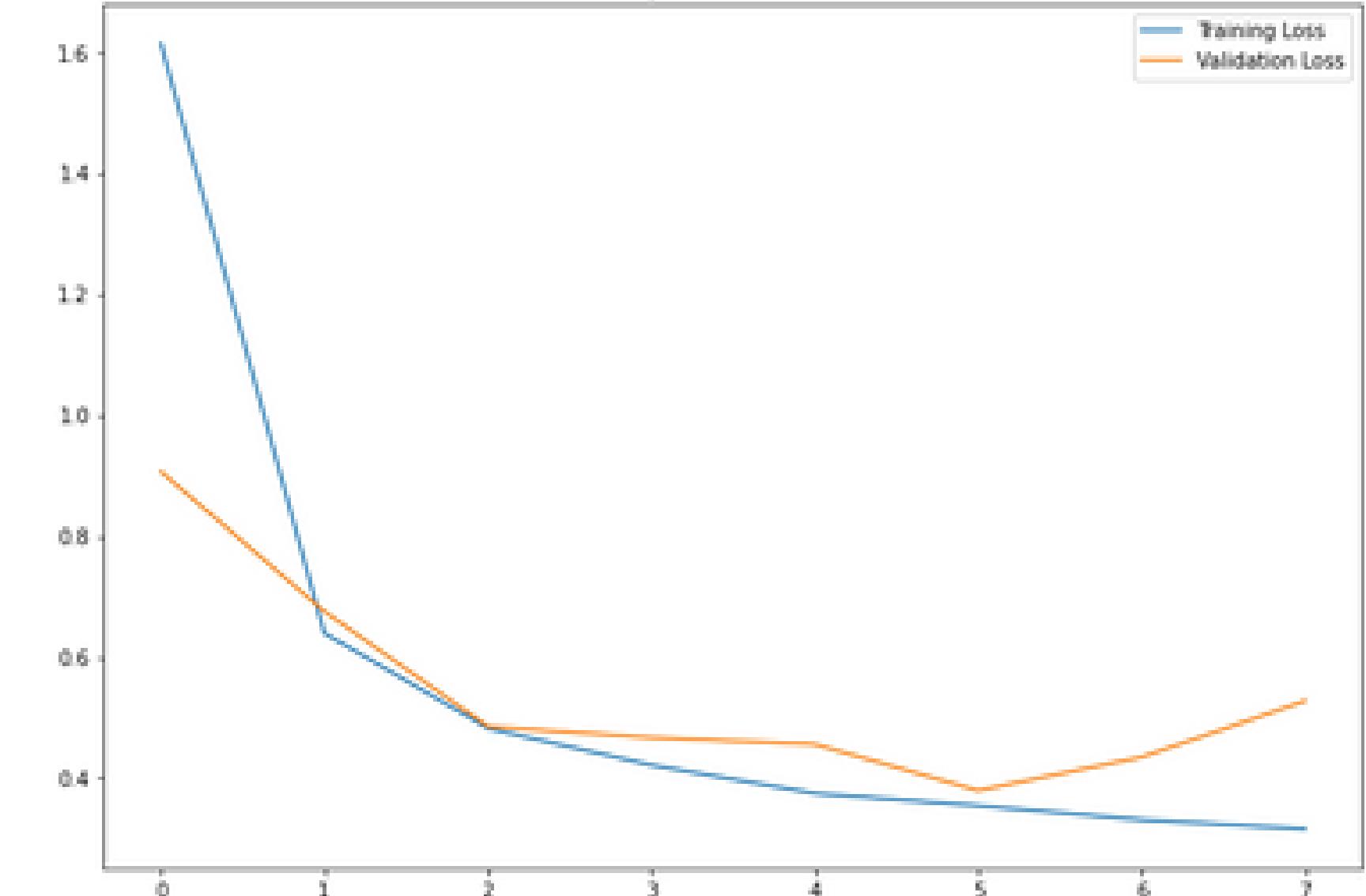
Default Model Sequential APIs



Training and Validation Accuracy



Training and Validation Loss



Improved Model Sequential APIs



Model Summary

Matrix	Default Model	Improved Model
Accuracy	0.9382	0.8988
Validation Accuracy	0.8740	0.8726
Loss	0.2397	0.3302
Validation Loss	0.5044	0.5269



Summaries

70,295 leaf image data of agricultural plants with a total of 38 classes, both diseased leaves and healthy leaves from 14 types of plants were used as input for the model. The CNN model that is made provides a fairly good performance after undergoing improvement and there is no overfitting.



[Web Predictor](#)



Thank You

"Part of the Agricultural Production Industrial Complex "