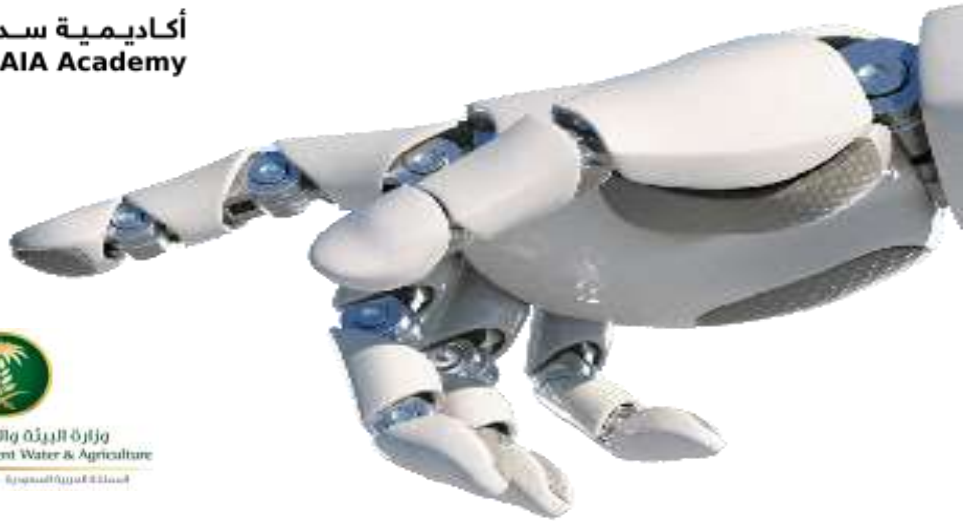
أكاديمية سدايا
SDAIA Academy

وزارة البيئة والمياه والزراعة
Ministry of Environment Water & Agriculture



Smart Classification of Plant Disease

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Motivation

- Saudi Arabia vision 2030, the Green Riyadh project.
- Using Technology in Agriculture.

Problem definition

Diagnose plant disease by Building a classification system with deep learning models

Objective

Help farmers to diagnose plant disease and treatment in easier way.



Late Blight plant



Early Blight plant



Healthy plant

Data Structure

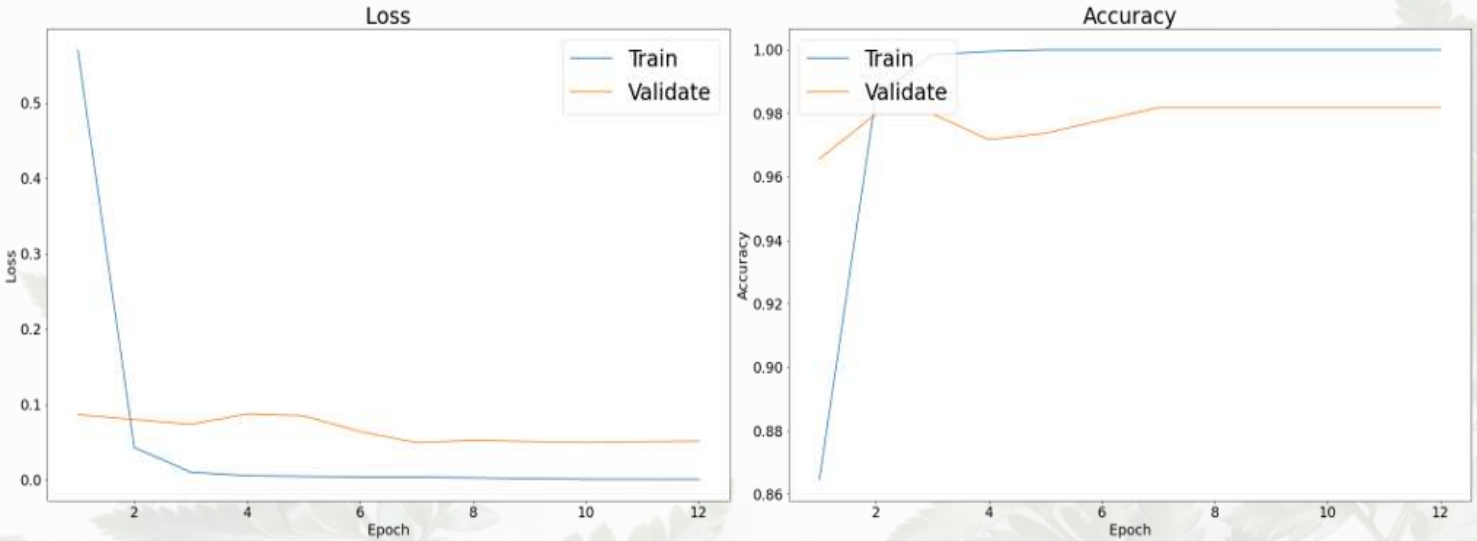
3000 image

Methodology

Deep Learning Models

	Test Accuracy	Test Loss
Xception	0.94	0.25
VGG16	0.91	0.27
ResNet50	0.98	0.04
Sequential	0.96	0.10

BEST MODEL → **ResNet50**




DEMO

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 100.0%

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 99.98%

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 99.49%

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 99.85%

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 100.0%

Actual: Plant_Late_blight,
Predicted: Plant_Late_blight.
Confidence: 99.98%

Conclusion

ResNet50 model was the best model in our Plant Disease Classification System to predict weather the plant Healthy, early blight or late blight.

Future work

- Real Time Detection using drones on the green fields
- Chatbot for personalized help.
- Advising on best practices.


Thank you
KEEP LEARNING
KEEP GROWING