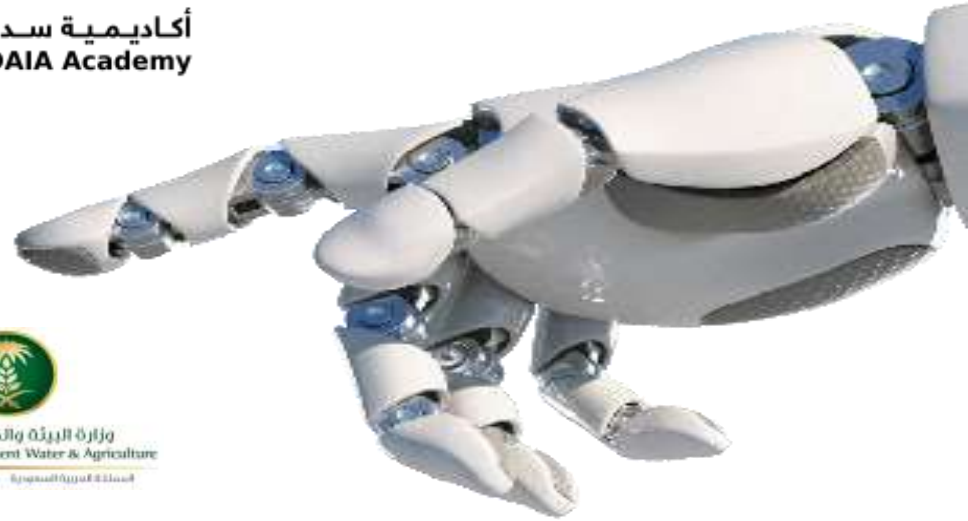




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وزارة البيئة والمياه والزراعة
Ministry of Environment Water & Agriculture
Kingdom of Saudi Arabia - المملكة العربية السعودية



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



A collection of various green tropical leaves, including palm fronds and broad-leafed plants, arranged in the top-left corner of the slide.

Objective

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





Late Blight plant



Early Blight plant



Healthy plant

Data Structure


3000 image





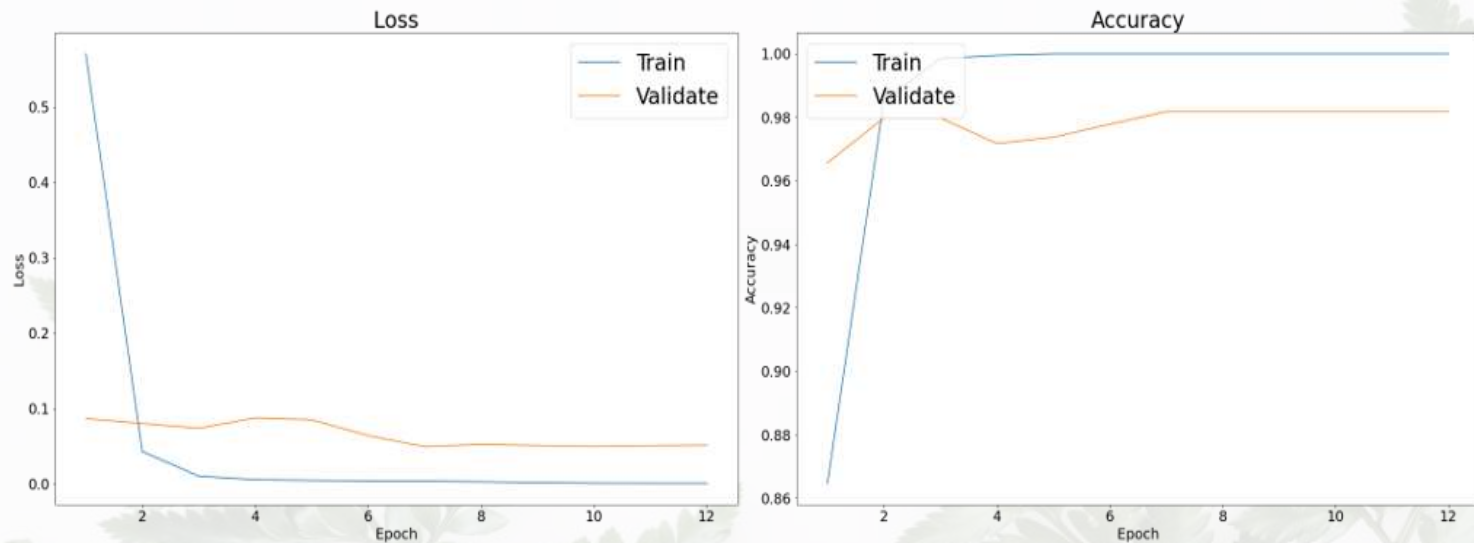
Methodology

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



A close-up photograph of two business professionals in a meeting. One person, wearing a blue suit and a silver watch, is writing on a document with a black pen. Another person's hand is visible, pointing at the document. A silver laptop is on the left, and a small potted cactus is in the foreground. A white rectangular box with the word 'DEMO' in bold black letters is overlaid on the right side of the image.

DEMO

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



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



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



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




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



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 whether the plant is 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