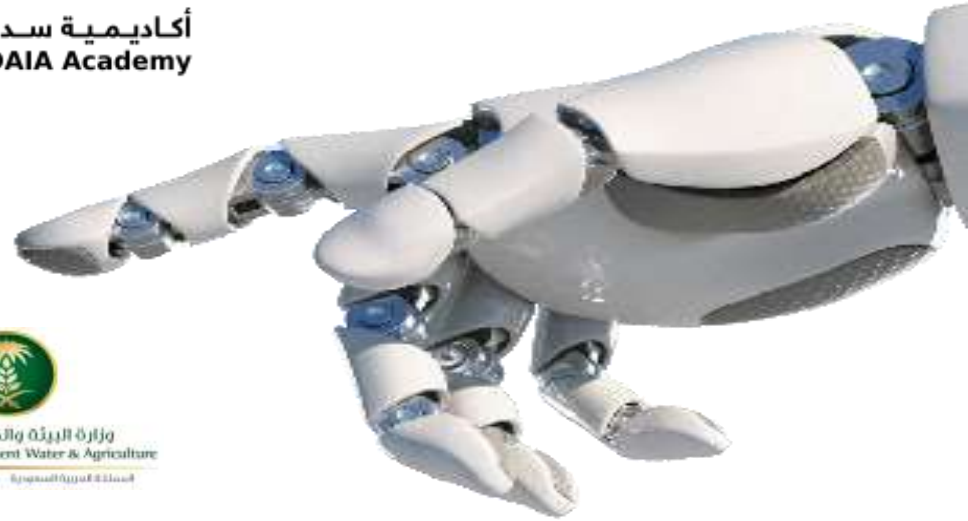




أكاديمية سدايا  
SDAIA Academy



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



# Smart Classification of Plant Disease

Instructor:  
Dr. Mejdal Alqahtani

Deem Alshammari  
Fawzia Alsubaie



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# Motivation

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



# Problem definition

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





A collection of various 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

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3000 image





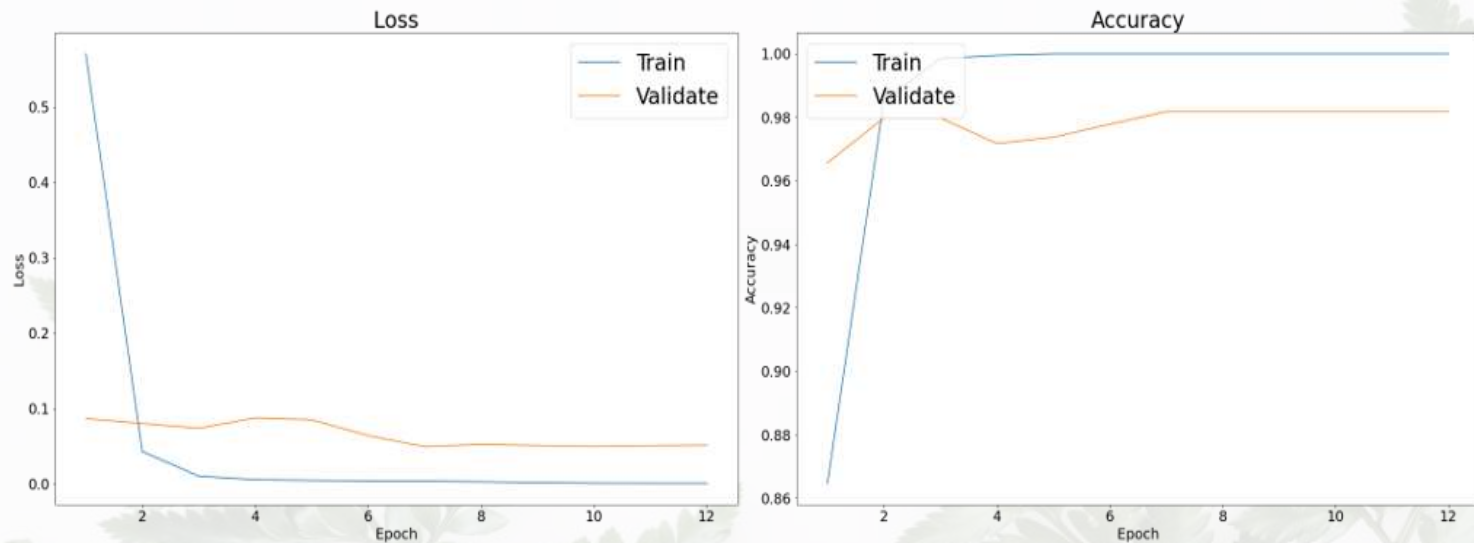
# Methodology

## 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: 99.85%



Actual: Plant\_Late\_blight,  
Predicted: Plant\_Late\_blight.  
Confidence: 100.0%



Actual: Plant\_Late\_blight,  
Predicted: Plant\_Late\_blight.  
Confidence: 99.98%



Actual: Plant\_Early\_blight,  
Predicted: Plant\_Early\_blight.  
Confidence: 99.89%




Actual: Plant\_Early\_blight,  
Predicted: Plant\_Early\_blight.  
Confidence: 100.0%



Actual: Plant\_Late\_blight,  
Predicted: Plant\_Late\_blight.  
Confidence: 100.0%





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# 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.

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## Future work

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





Thank you

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KEEP LEARNING

KEEP GROWING