



# CLASIFICADOR DE ENFERMEDADES EN PLANTAS

# PROBLEMA



# DATOS

## PLANT VILLAGE



# DATOS

## PLANT VILLAGE



saludable



araña roja



septoria



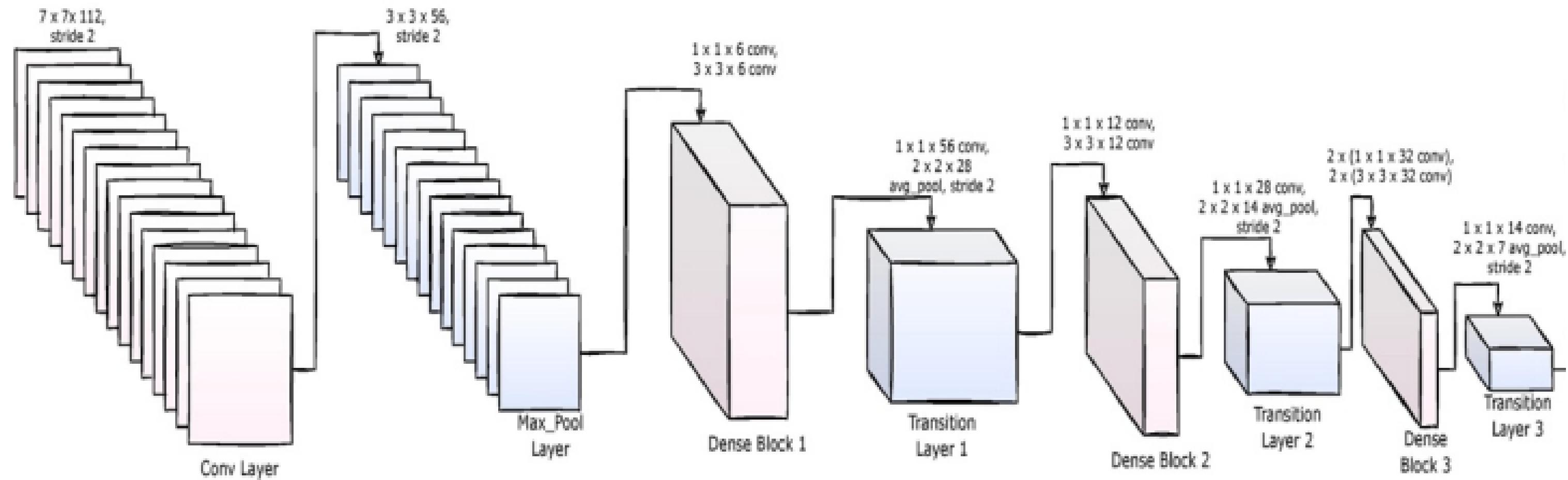
virus del mosaico

# MODELO



# MODELO

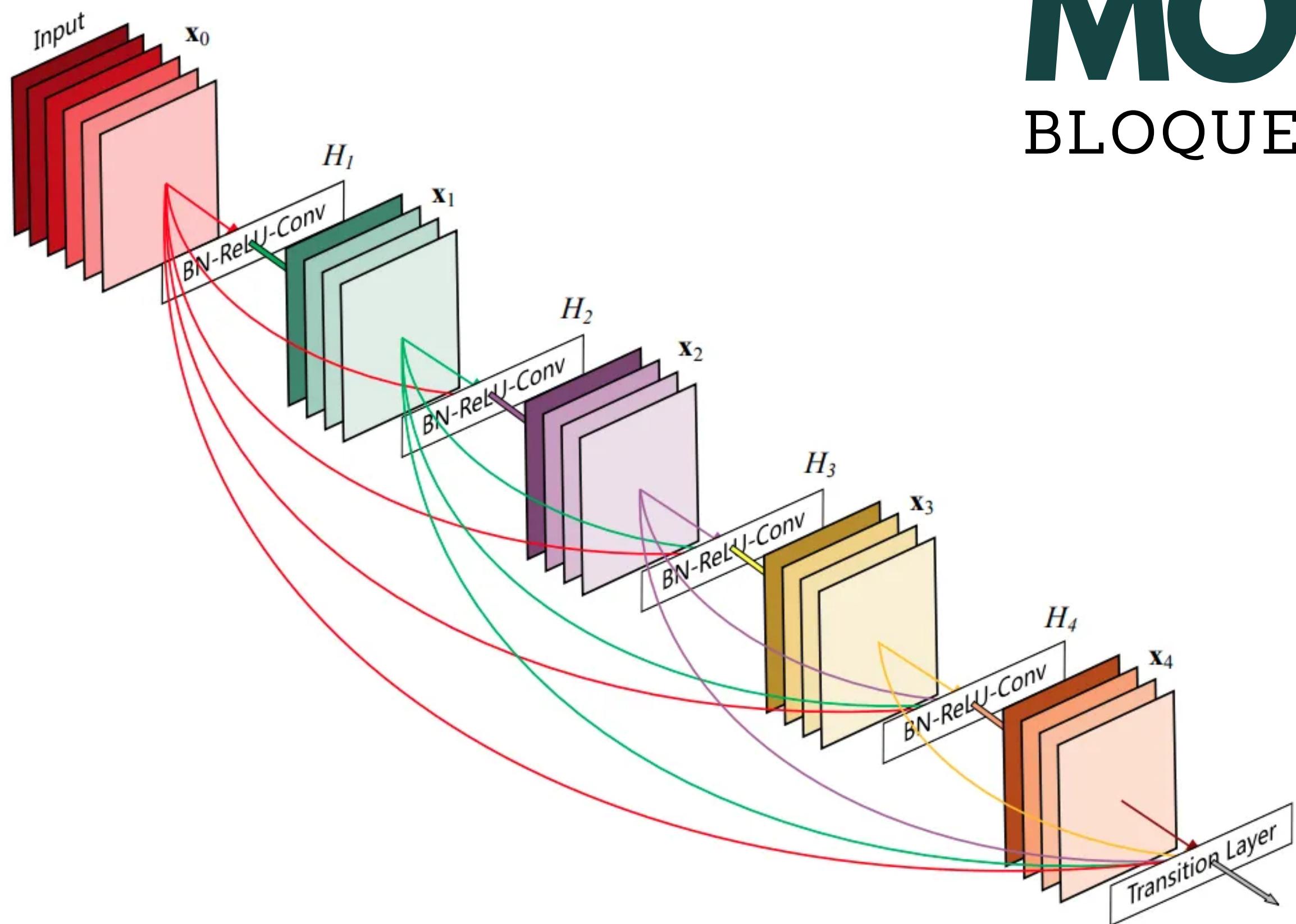
## DENSENET 169



Fuente: Fine-tuned DenseNet-169 for breast cancer metastasis prediction using FastAI and 1-cycle policy (Vulli et al, 2022)

# MODELO

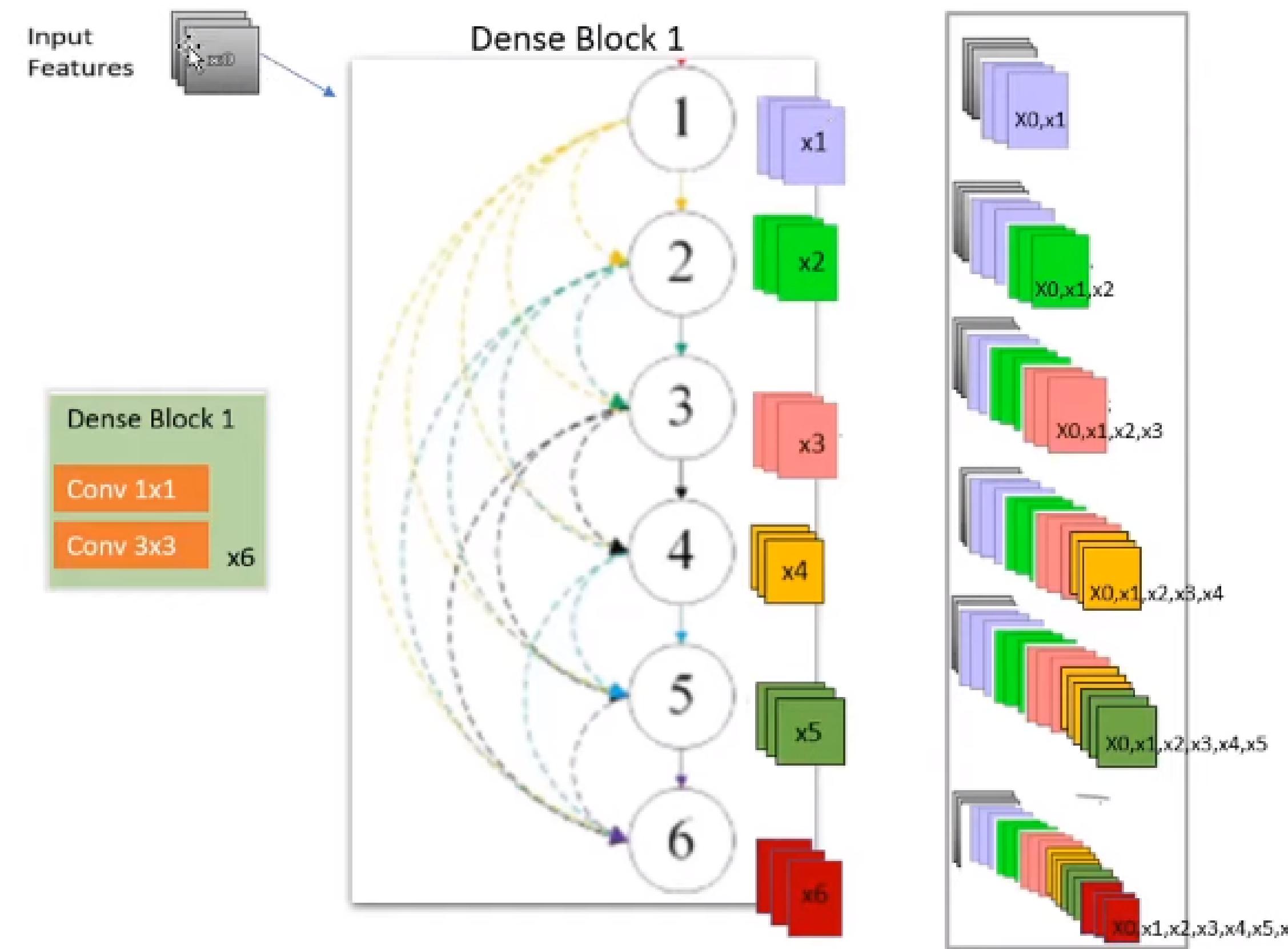
## BLOQUES



Fuente: Densely Connected Convolutional Networks (Huang et al, 2017)

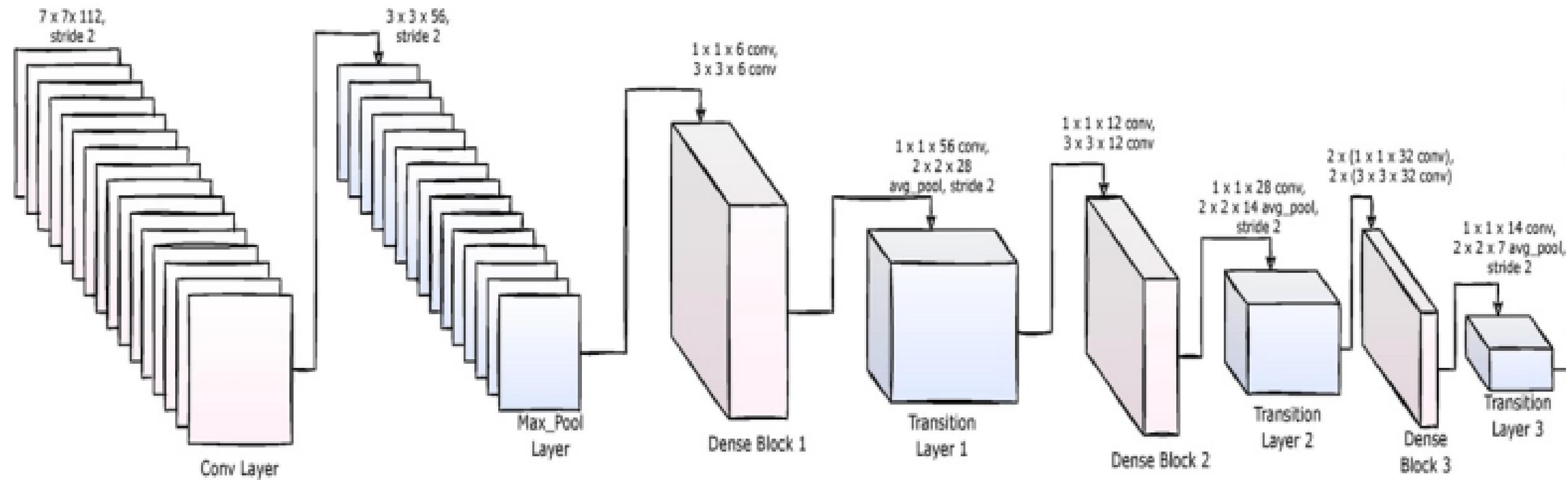
# MODELO

## BLOQUES



# MODELO

## DENSENET 169



Fuente: Fine-tuned DenseNet-169 for breast cancer metastasis prediction using FastAI and 1-cycle policy (Vulli et al, 2022)

# MODELO



# RESULTADOS

## PRIMER MODELO

Los datos de entrenamiento llegaron a una precisión de 84% y los de prueba a un 79% en el mejor de los casos

```
145/145 [=====] - 10s 70ms/step - loss: 2.1783 - accuracy: 0.7910
Pérdida en los datos de prueba: 2.1782634258270264
Precisión en los datos de prueba: 0.7909641265869141
```

# RESULTADOS

## MODELO DENSENET

```
Epoch 1/3
1213/1213 [=====] - 5588s 5s/step - loss: 0.9445 - accuracy: 0.7505 - val_loss: 0.3442 - val_accuracy: 0.8942
Epoch 2/3
1213/1213 [=====] - 5520s 5s/step - loss: 0.3468 - accuracy: 0.8954 - val_loss: 0.2462 - val_accuracy: 0.9154
Epoch 3/3
1213/1213 [=====] - 5545s 5s/step - loss: 0.2666 - accuracy: 0.9159 - val_loss: 0.1889 - val_accuracy: 0.9394

261/261 [=====] - 1178s 5s/step - loss: 0.2541 - accuracy: 0.9151
Pérdida en los datos de prueba: 0.2541446387767792
Precisión en los datos de prueba: 0.9150999784469604
```

# RESULTADOS

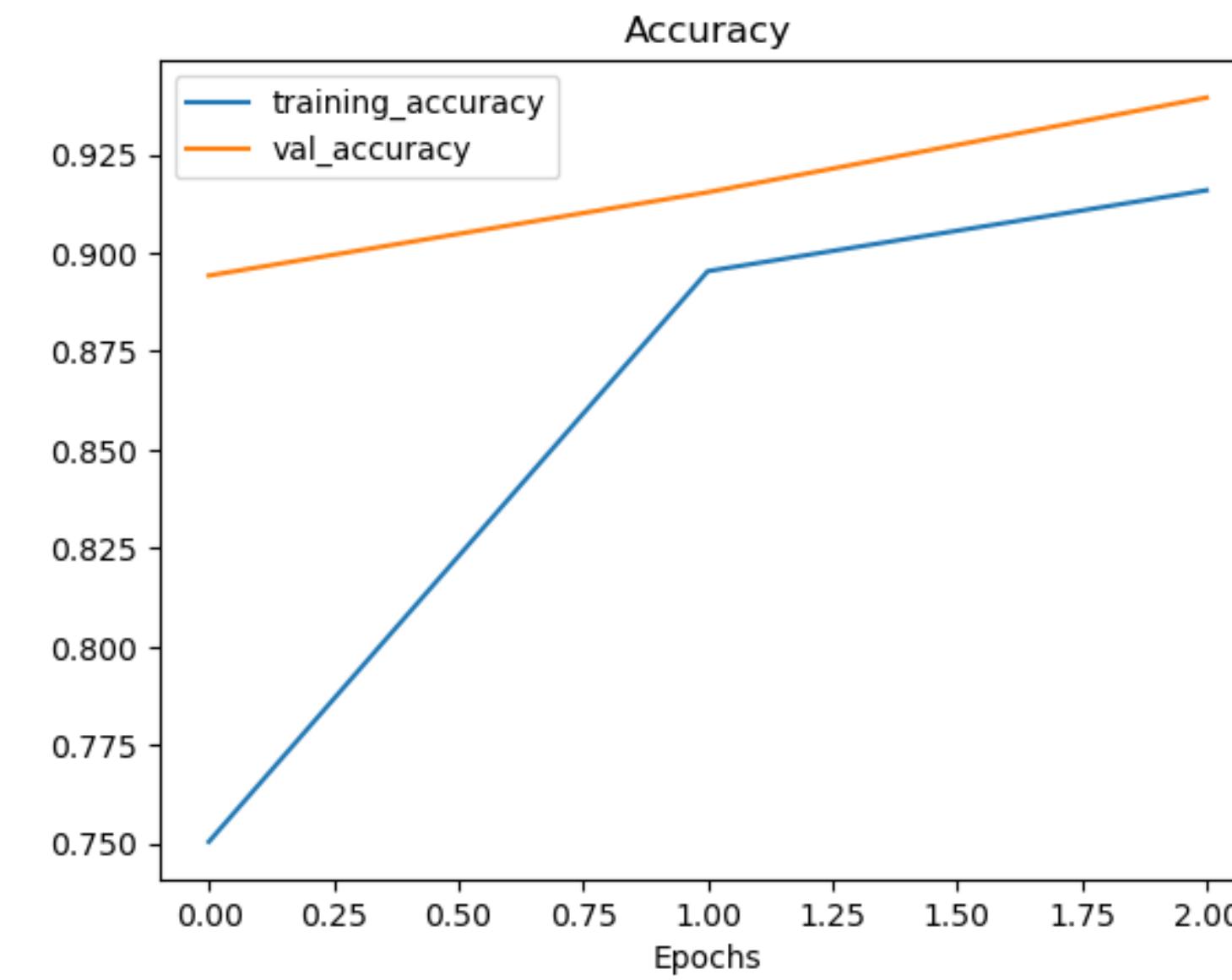
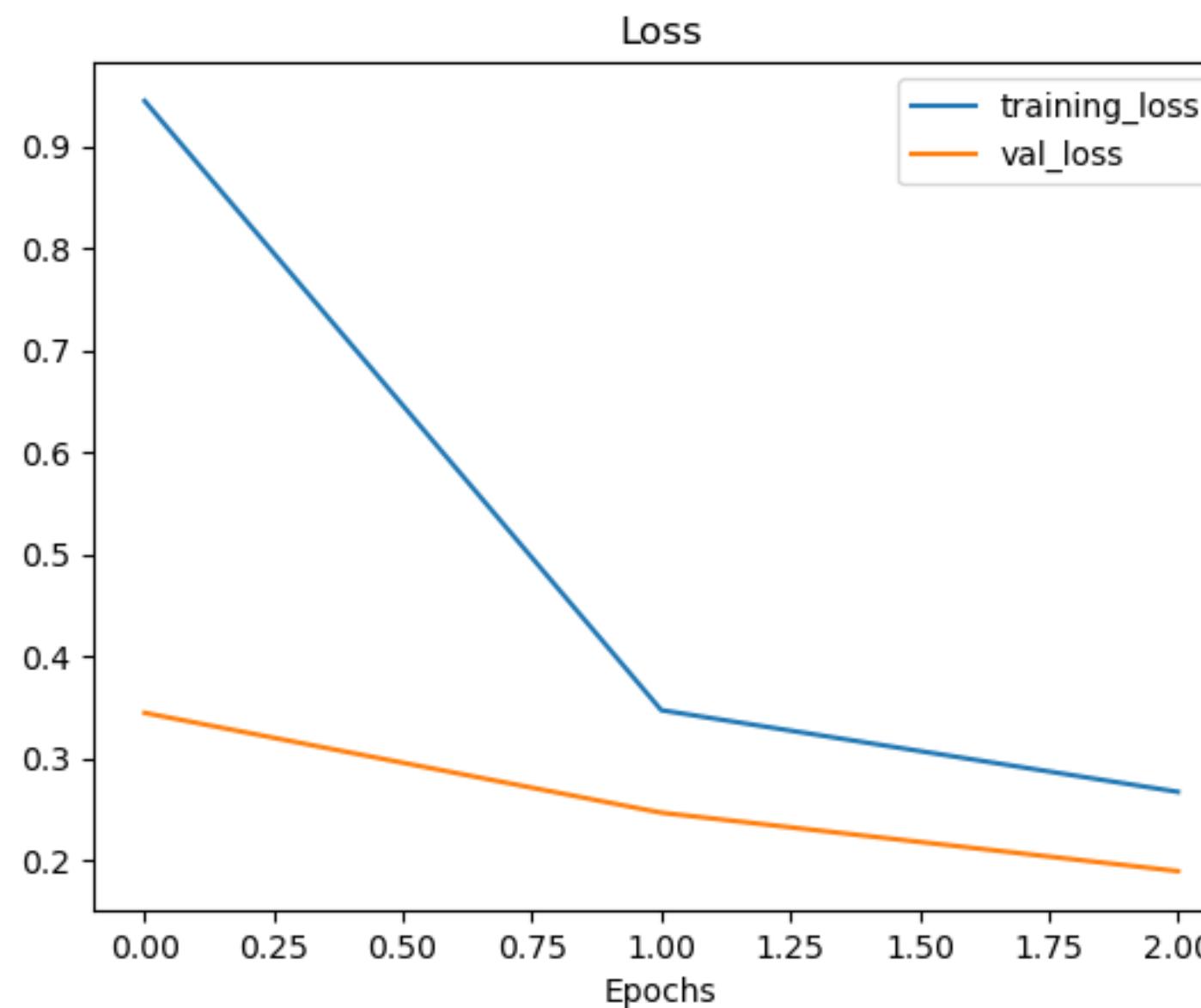
## MODELO DENSENET

```
Epoch 1/3
1213/1213 [=====] - 5588s 5s/step - loss: 0.9445 - accuracy: 0.7505 - val_loss: 0.3442 - val_accuracy: 0.8942
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# RESULTADOS

## MODELO DENSENET



# RESULTADOS

## MODELO DENSENET



1/1 [=====] - 0s 334ms/step  
'Grape\_\_Black\_rot'

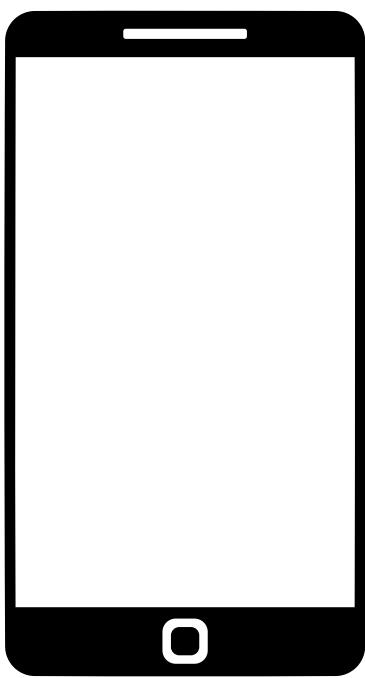


1/1 [=====] - 2s 2s/step  
'Background\_without\_leaves'

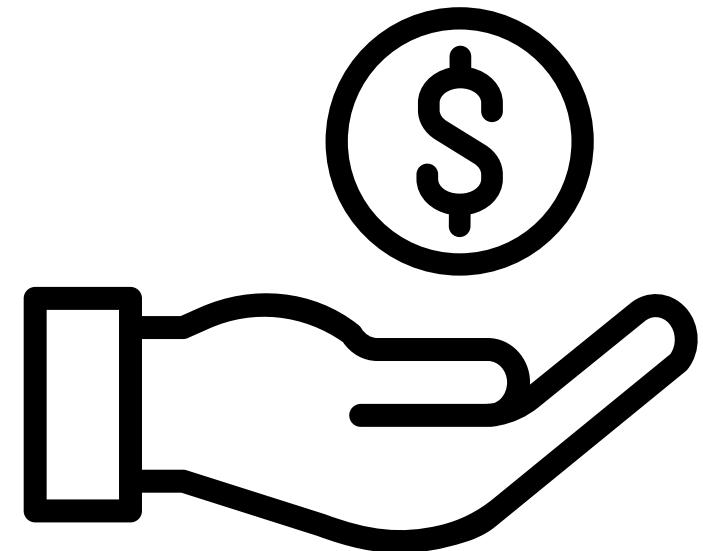
# PROYECCIÓN



Incluir nuevos datos



Implementación prototipo  
App móvil



Comercializar  
Agropecuaria YPF  
FreshLuque

# REFERENCIAS

- Vulli, A., Srinivasu, P. N., Sashank, M. S. K., Shafi, J., Choi, J., & Ijaz, M. F. (2022). Fine-tuned DenseNet-169 for breast cancer metastasis prediction using FastAI and 1-cycle policy. *Sensors*, 22(8), 2988.
- Huang, G., Liu, Z., Van Der Maaten, L., & Weinberger, K. Q. (2017). Densely connected convolutional networks. In Proceedings of the IEEE conference on computer vision and pattern recognition (pp. 4700-4708).