

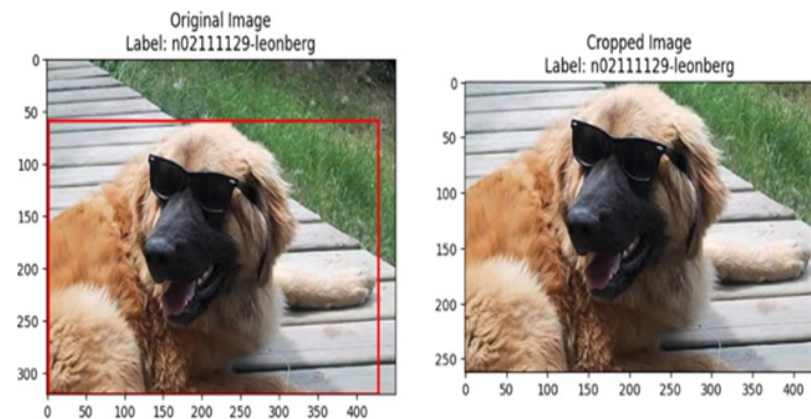
**Accessible Dog
Breed Recognition for
Lost & Found
Services and Pet
Shop Management**



APPROACH

Cropping Using Bounding Boxes

Data Augmentation



Choosing the Architecture

MobileNetV2



Low Resource Consumption



Faster Inference



Balanced Performance

Initial Benchmark

10 Layers Unfrozen

Accuracy

68.72%



67.76%

Replacing RELU with ELU

Experimentation with Alpha Parameter in ELU Activation

Alpha	Accuracy
0.5	69.83%
1	68.16%
1.5	70.30%
2	70.52%

Addressing Oscillations

Batch Size
from 32 to 64

Added a
convolution
layer

Accuracy






70.30%



Accuracy

74.39%

Addressing overfitting and Improving Accuracy

Dropout [0.2]		0.21% 	74.39%
Layers	Accuracy		
30	2.47%		77.07%
50	0.53%		
80	No effect		77.60%
100	No effect		

Dropout

Dropout Rate	Accuracy
0.2	77.60%
0.3	77.39%
0.5	80%

Optimizing Added Convolutional Layer

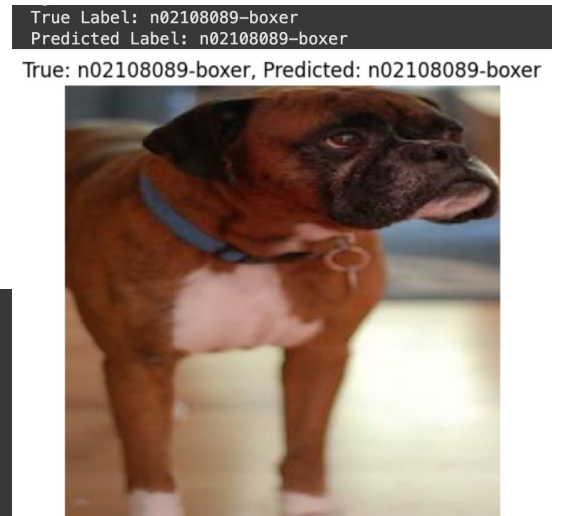
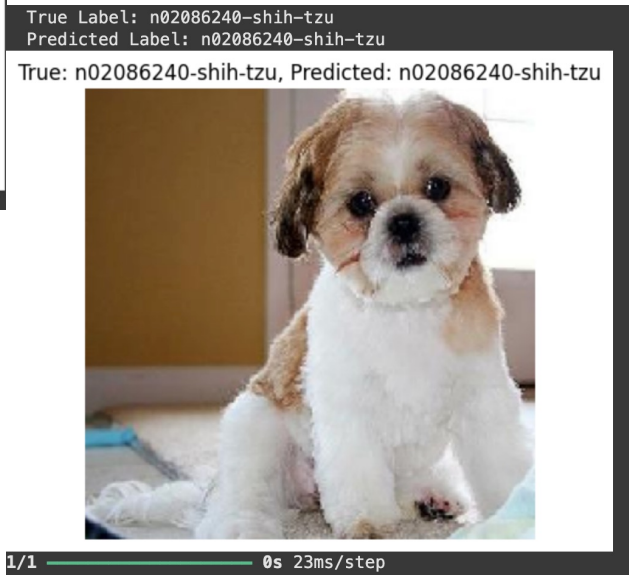
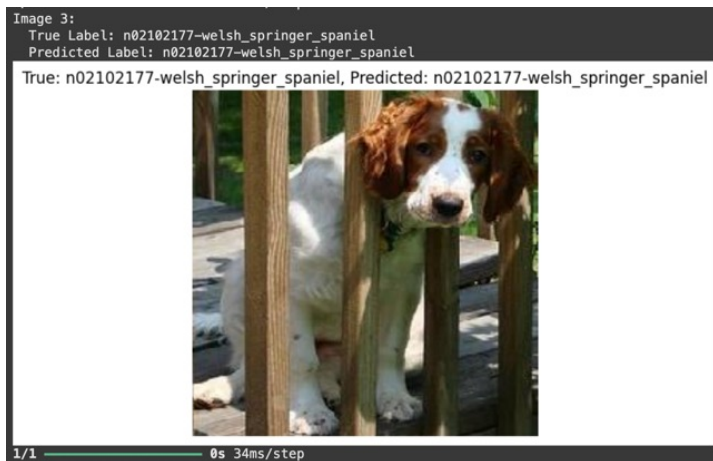
Added Layer Type
Convolution Layer
Inverted Residual Block

17.4% ↓

Impact of Different Kernels on Model Performance

Kernel Size	Accuracy
2×2	73.00%
3×3	73.26%
4×4	73.52%
5×5	77.20%
6×6	73.80%

Predictions



Future Work

Data Augmentation

**Kernel Size Optimization
in Convolutional Layer**

**Regularization
Techniques**

**Separate Learning Rate
Tuning**

Thank You

