

# Copyright Notice

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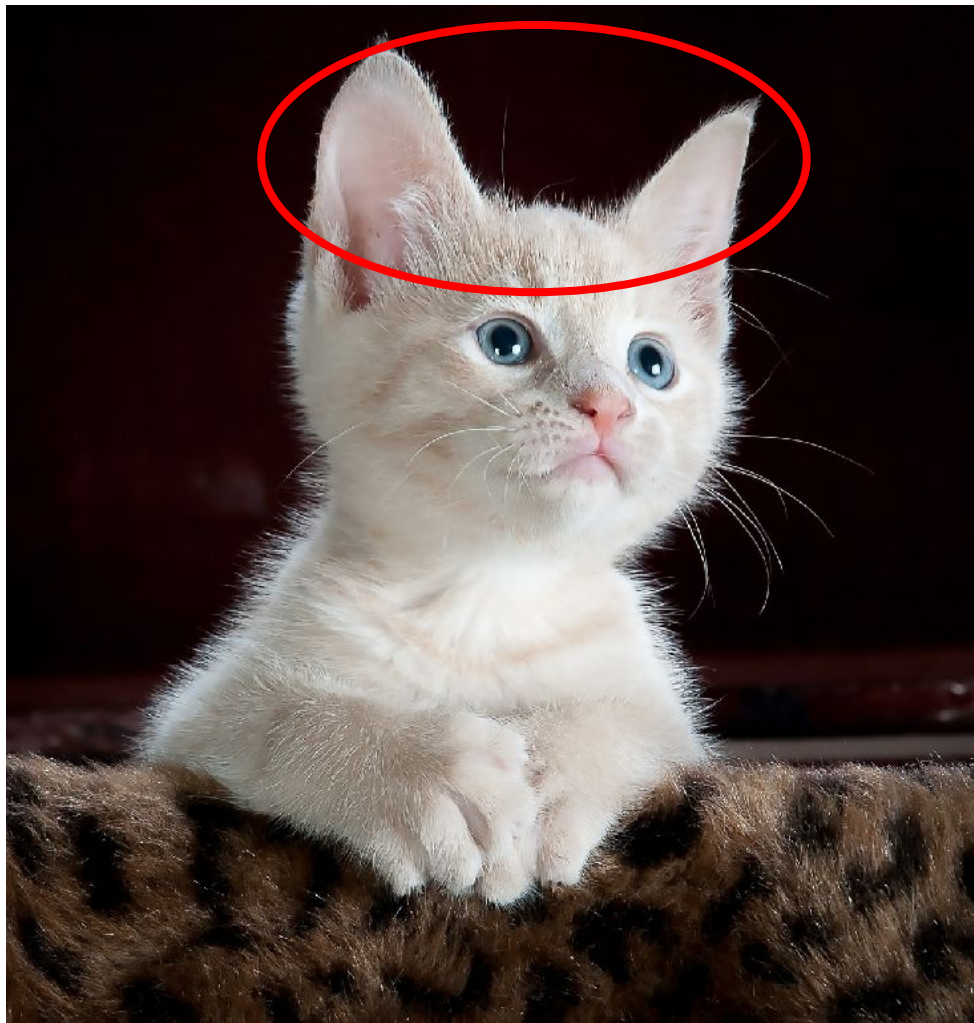


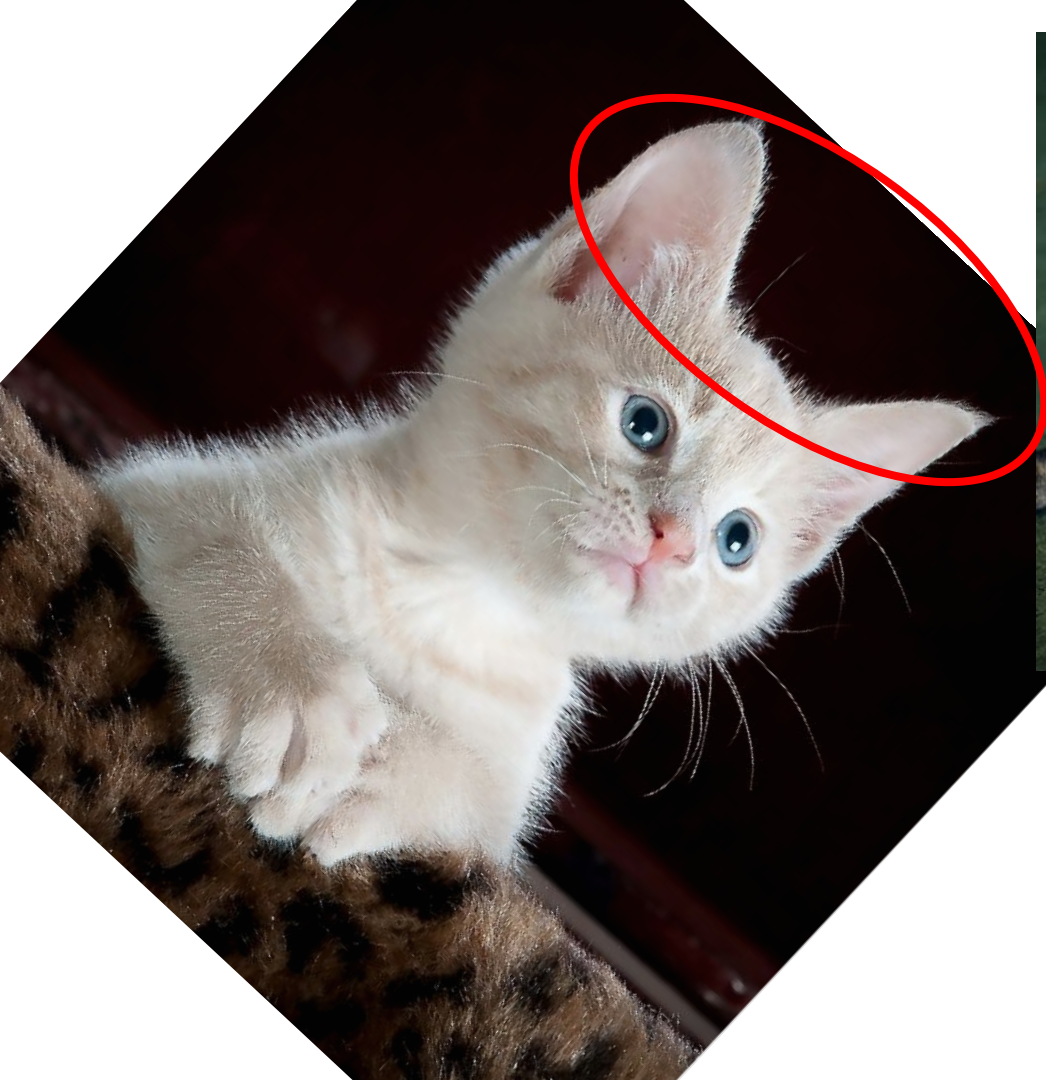












```
train_dataset = tf.keras.utils.image_dataset_from_directory(  
    train_dir,  
    image_size=(150, 150),  
    batch_size=20,  
    label_mode='binary')
```

```
SHUFFLE_BUFFER_SIZE = 1000  
PREFETCH_BUFFER_SIZE = tf.data.AUTOTUNE
```

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train_dataset_final = (train_dataset  
    .cache()  
    .shuffle(SHUFFLE_BUFFER_SIZE)  
    .prefetch(buffer_size=AUTOTUNE))
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data_augmentation = tf.keras.Sequential([
    tf.keras.Input(shape=(150, 150, 3)),
    tf.keras.layers.RandomFlip('horizontal'),
    tf.keras.layers.RandomRotation(0.2, fill_mode='nearest'),
    tf.keras.layers.RandomTranslation(0.2, 0.2, fill_mode='nearest'),
    tf.keras.layers.RandomZoom(0.2, fill_mode='nearest')
])
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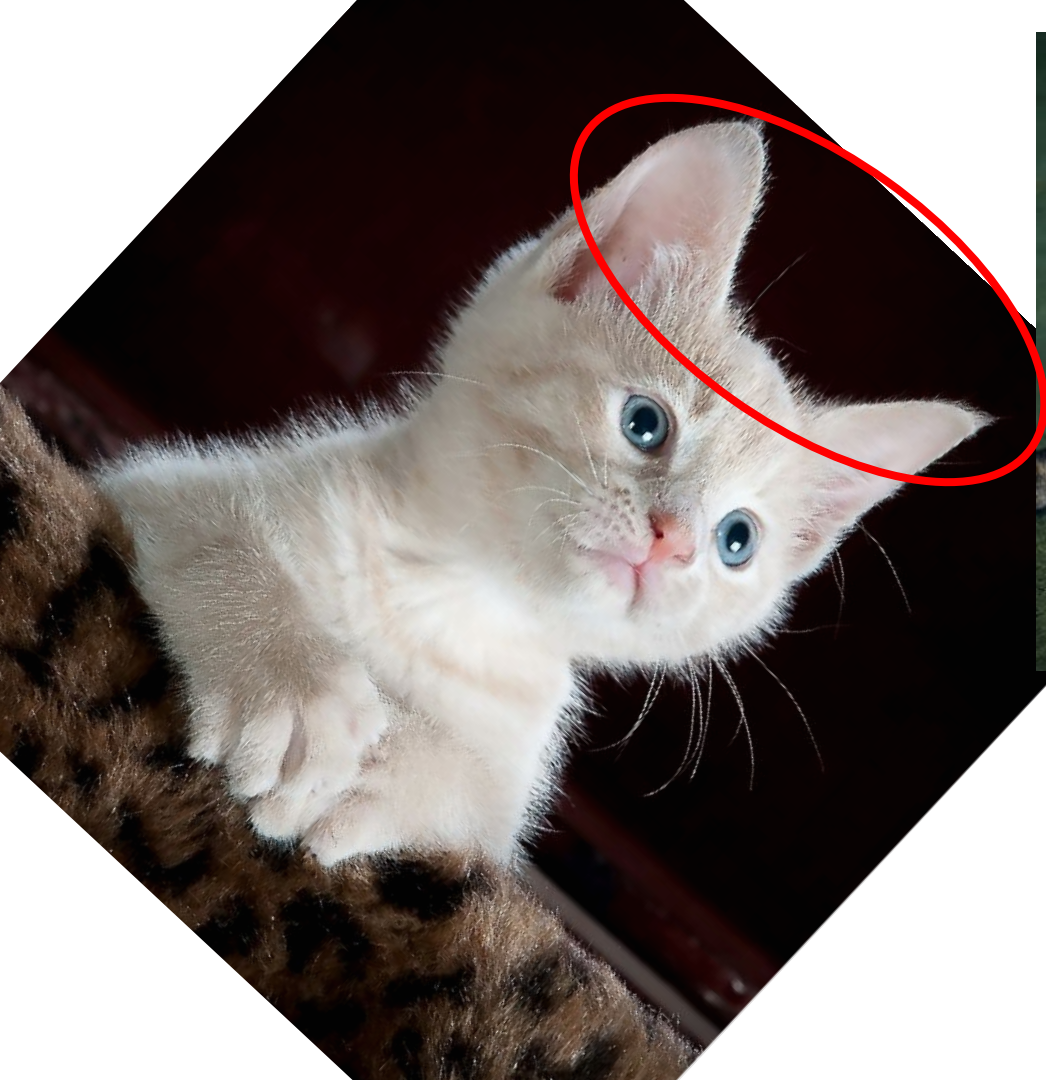






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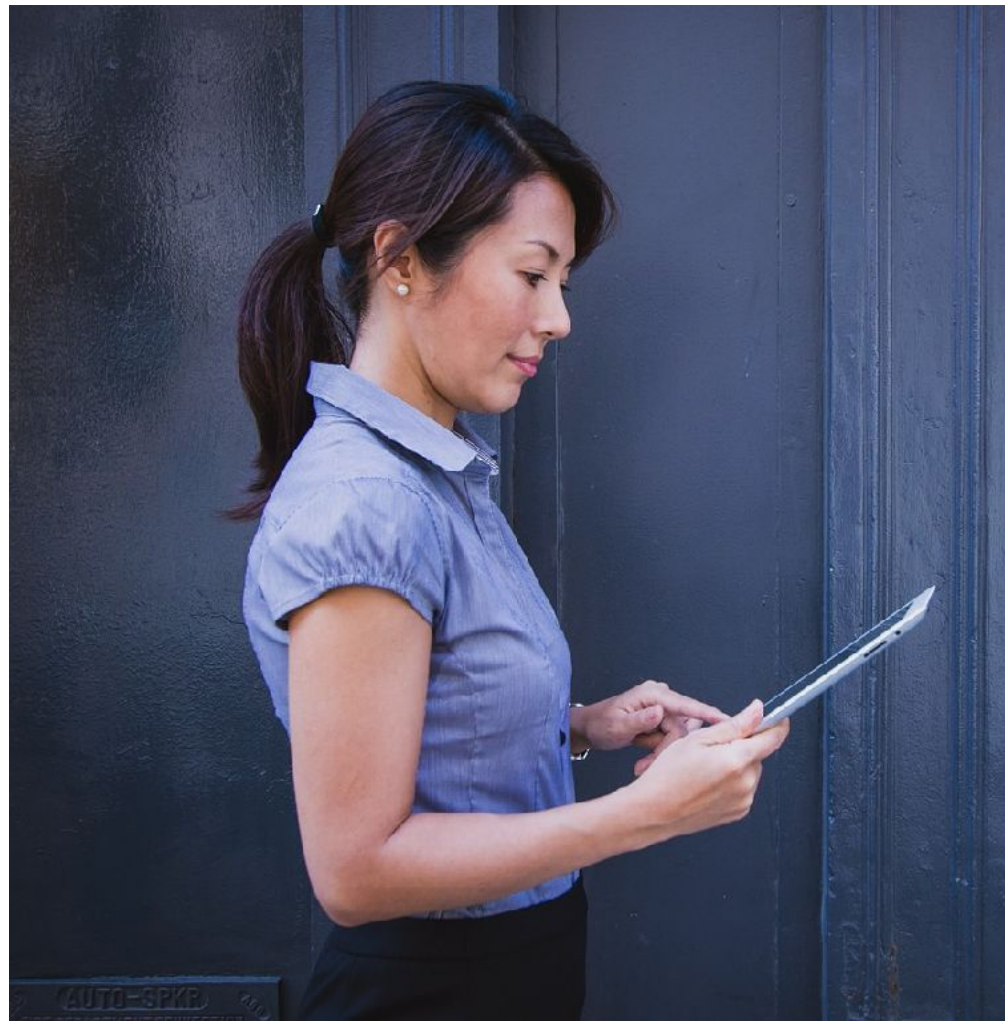
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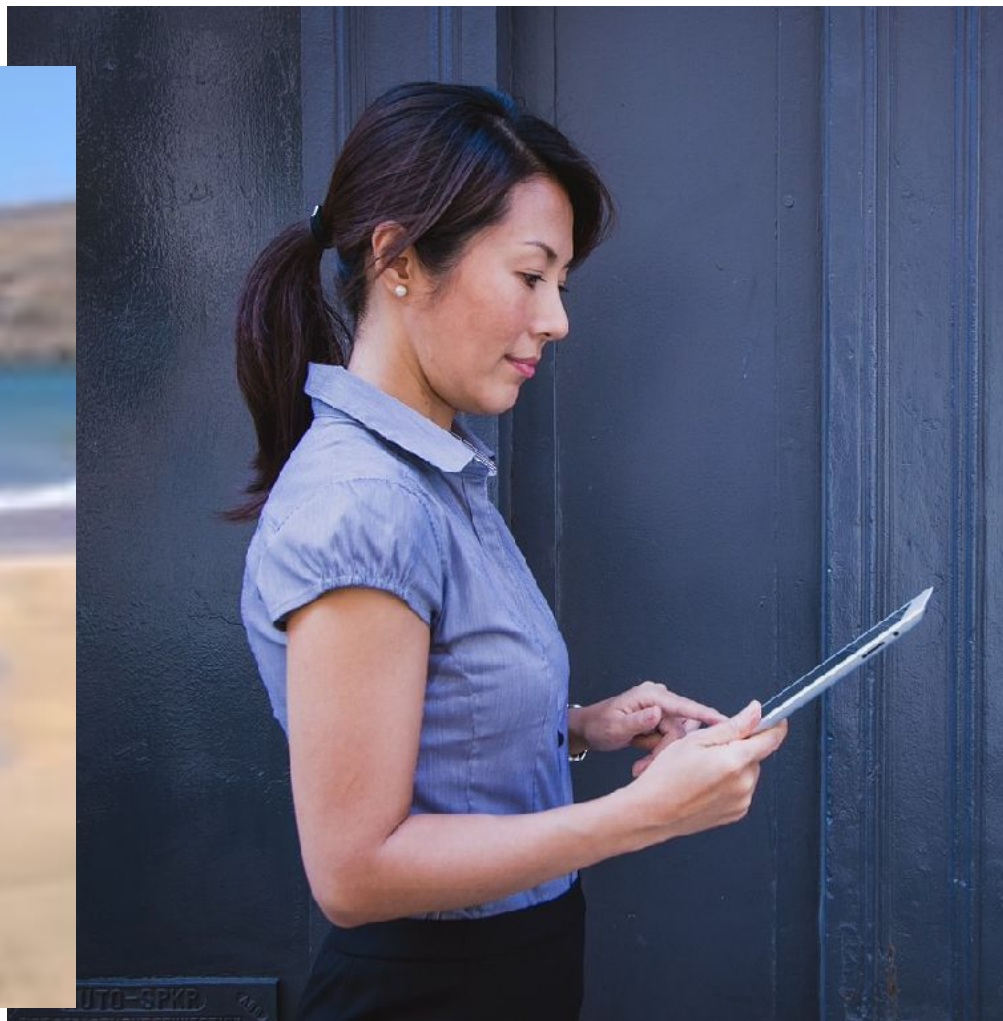


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```
model_without_aug = create_model()
```

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model_with_aug = tf.keras.models.Sequential([  
    data_augmentation,  
    model_without_aug  
])
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model_with_aug.compile(  
    loss='binary_crossentropy',  
    optimizer=tf.keras.optimizers.RMSprop(learning_rate=1e-4),  
    metrics=['accuracy']
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