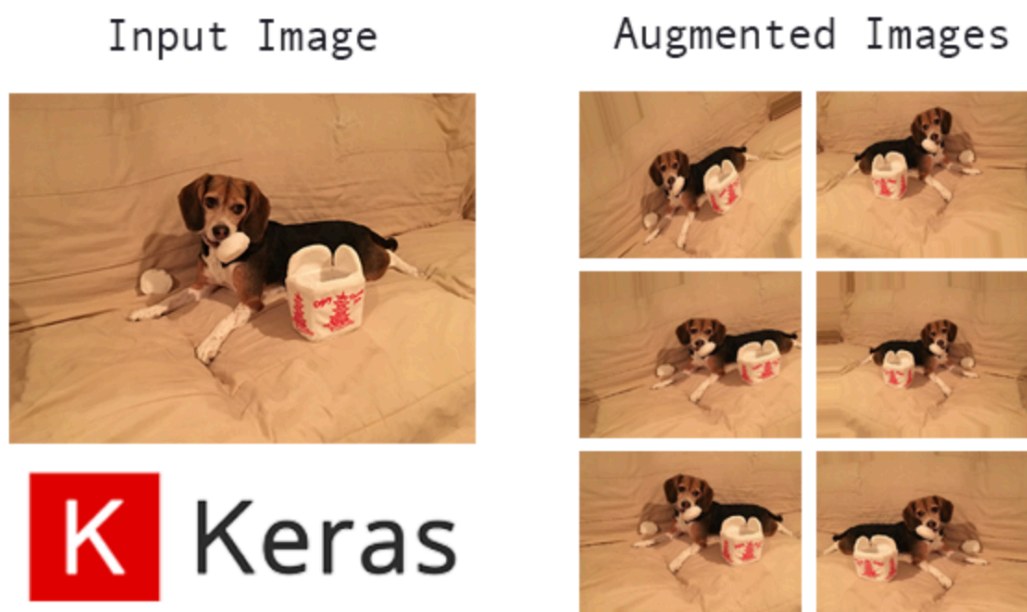# TJEDC - Tom and Jerry Emotion Detection Challenge

Problem Statement- to build a model that detects emotions of the characters in a video frame from our most-loved show. Build a model that detects the emotion of the character present in each frame.

- Used Keras' ImageDataGenerator class to perform data augmentation.

- Keras ImageDataGenerator class actually works by:
  - Accepting a batch of images used for training.
  - Taking this batch and applying a series of random transformations to each image in the batch (including random rotation, resizing, shearing, etc.).
  - Replacing the original batch with the new, randomly transformed batch.
  - Training the CNN on this randomly transformed batch (i.e., the original data itself is not used for training).

- The summary of the CNN used

```
In [5]: classifier.summary()
```

```
Model: "sequential_1"
_____
Layer (type)                 Output Shape              Param #
=================================================================
conv2d_1 (Conv2D)            (None, 148, 148, 32)      896
_____
max_pooling2d_1 (MaxPooling2 (None, 74, 74, 32)        0
_____
conv2d_2 (Conv2D)            (None, 72, 72, 32)        9248
_____
max_pooling2d_2 (MaxPooling2 (None, 36, 36, 32)        0
_____
flatten_1 (Flatten)          (None, 41472)             0
_____
dense_1 (Dense)              (None, 128)               5308544
_____
dense_2 (Dense)              (None, 5)                 645
=================================================================
Total params: 5,319,333
Trainable params: 5,319,333
Non-trainable params: 0
_____
```