Documentation for Body Score Prediction Model

This code utilizes TensorFlow to train a model for predicting body scores based on images of animals.

1. **Environment setup:**

Installing of Dependencies;

- TensorFlow
- pandas
- numpy
- matplotlib
- EfficientNet

Kaggle Environment

2. **Data Preparation:**

Dataset Location: The dataset is cloned from the git hub repo and stored in the Kaggle environment making it accessible.

Label File: The code expects a CSV file named train_data.csv in the body_score_dataset directory containing the labels (body scores) corresponding to the images.

3. **Data Loading and Pre-processing:**

The load_and_preprocess_image function handles image loading and preprocessing.

The code currently uses **EfficientNetB0** which requires input images to be resized to 224x224 pixels.

4. **Model Training:**

Adjust Model Architecture:

The code uses a pre-trained EfficientNetB0 model and adds additional layers for classification.

Using the **model = models. Sequential ([...]) section.**

Fine-tune Hyperparameters:

Experiment with the learning rate, optimizer, loss function, and other hyperparameters to optimize model performance.

Modify the initial_learning_rate, optimizer, and loss=... arguments within model.compile(...).

Train/Validation Split:

The code automatically splits the dataset into 70% training and 30% validation sets.

5. **Prediction and Submission:**

Submission File:

The code reads a CSV file named sample_submission.csv from the body_score_dataset directory to create submission predictions.

We ensured the filenames in the sample_submission.csv match the image filenames in your body_score_dataset.

Prediction Threshold:

The code uses a threshold of 5.0 to classify predictions. Evaluated by df**_submit['bodyScore'] = [5.0 if i>5 else i** for i in predictions_flattened] line.

Submission File Output:

The code outputs the predictions to a file named **submission.csv.**

Key Point:

Kaggle Environment: The code is optimized for Kaggle notebooks. If you're running it outside of Kaggle, make sure you have the appropriate environment setup and data access.