A presentation on

“Image Processing for model training and Deep Learning”

Submitted By:

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Objective and Problem Statement

Problem:

During Deep Learning model training we require an immense amount of dataset. The collection of dataset is being random produces the bias of data samples with different features. For example developing a model to classify between cats and dogs can have dataset of various different aspect ratio, resolution, image format etc.

Objective:

Our system aims to develop a pipeline that will create homogeneity in the dataset that will be later feeded to our Deep Learning system for training or inferencing. As described in the problem our pipeline can automatically change the required features as per the needed model.

Methodology of the work

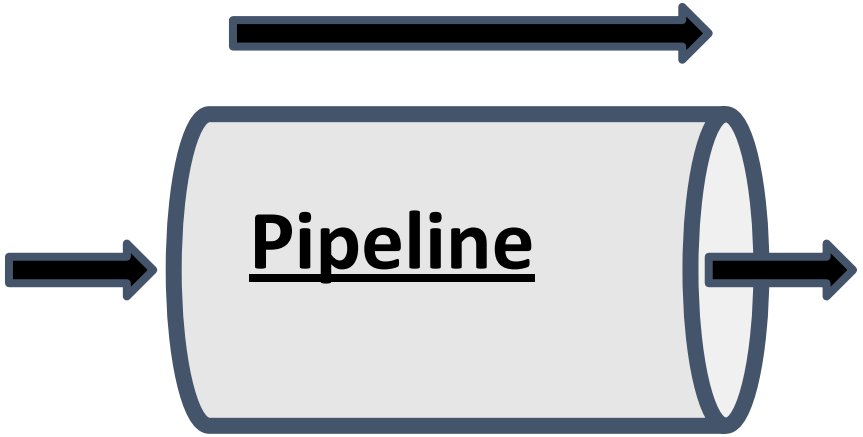
Our target is to develop a python library that will act as the middleware in between the model training and data preprocessing. Our ultimate target is to make our python fast and efficient enough to collaborate and be compatible with already existing some of the famous Deep Learning frameworks like Tensorflow, PyTorch, etc.

We are using the parallelism and multi-core processing so that our package be fast enough to handle really large chunk of data.

The user will specify his/her needs in a .yaml file and pass it's path to our package constructor like if he/she is training a classification model then they may need to specify aspect ratio, resolution needed, size of image, etc. Our package being a middleware will handle all of the rest processing.

Our target is to not only make it work for visual data but also make it possible to efficiently and smoothly handles all possible types of Deep Learning tasks like Computer Vision, Natural Language Processing, etc.

Result



dataset with Homogeneity


Thank
You