

## Assignment #6

For all your work, submit a Notebook (either Jupyter or Colab.)

Using **TensorFlow/Kera's Core** functionality, provide code snippets for the following Deep Learning tasks:

Create a simple Linear Regression based on the following random generated variables:

```
X = 2 * np.random.rand(10000, 5)
```

```
y = 3 + np.dot(X, [4.5, 3.2, -1.5, 2.7, 0.5]) + np.random.randn(10000)
```

Perform the following steps:

**1\_ Import necessary libraries.**

Import all libraries needed for your tasks.

**2\_ Prepare the data.**

Use the above input/output pair (X, y)

Perform standardization.

**3\_ Build the regression model.**

Use Keras' Sequential Model.

**4\_ Compile the model.**

Use optimizer = ADAM; loss = MSE (Mean Square d Error)

**5\_ Train the model.**

Use epochs = 100; batch\_size = 32; validation\_split = 20%

**6\_ Evaluate the model.**

Evaluate the model by printing its MSE score.

**Extra Credit: Tune the Model**

You can adjust the model architecture, hyperparameters, and data preparation steps according to your specific problem and requirements.