

## ML- WEEK - 4

### **REGRESSION: using Scikit-Learn with python**

1. You may prefer to create your own dataset (synthetic) using **make\_blobs()** fn. from scikit learn library
2. Prepare dataset for regression
3. Experiment with Simple Linear Regression, Multiple Regression and Logistic Regression based on the synthetic dataset and with any standard dataset of your choice.
4. Check the training, validation errors. Apply different resampling techniques (k-fold cross validation, stratified sampling, LOOCV) to improve the training, validation performance.
5. Visualize the output of regression using plots.
6. Understand Gradient Descent method for optimization of parameters
7. Improve the performance of Regression models using Regularization techniques (Lasso, Ridge).
8. Document all your observations carefully.

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