

# **Batch implementation for Logistic Regression Algorithm**

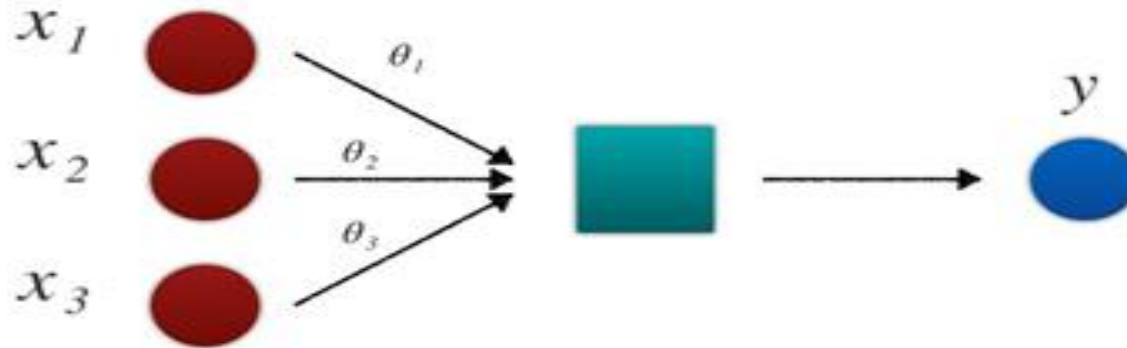
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# Agenda

1. Logistic Regression Model
2. LearningAPI - Logistic Regression Normal run and Batch run
3. Logistic Regression Pipeline Modules
4. Unit Tests
5. References

# Logistic Regression Model

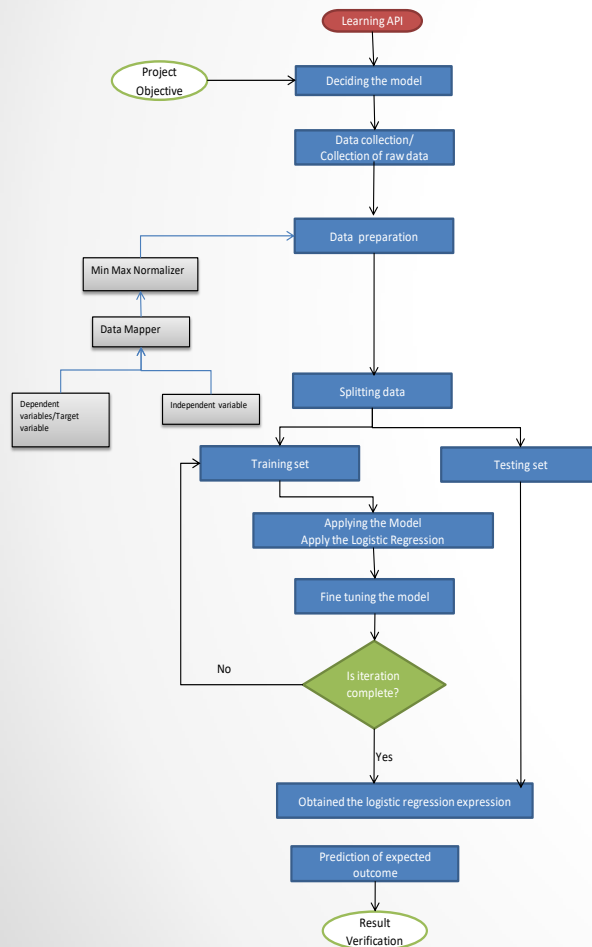
Fig. 1. Logistic Regression Model



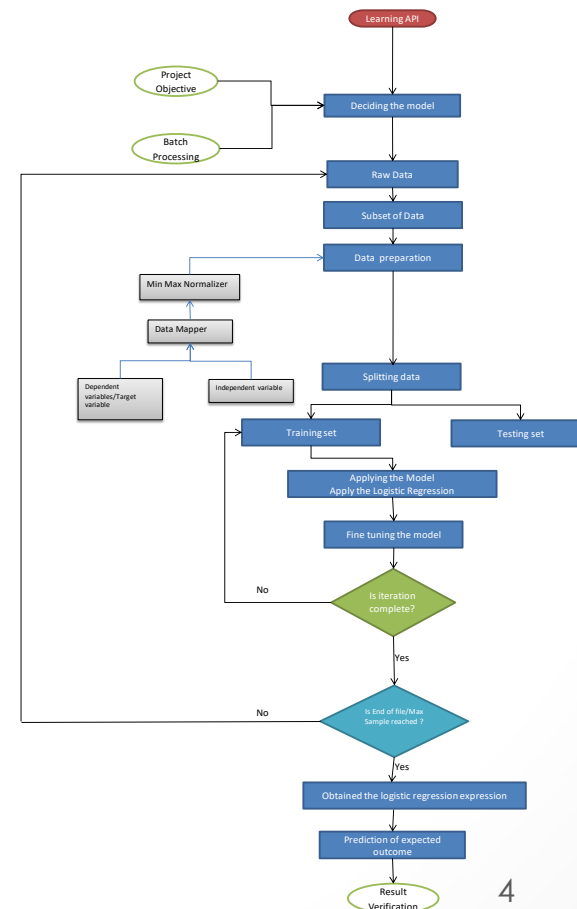
Logistic regression is a statistical method for analyzing a dataset in which there are one or more independent variables that determine an outcome.

# LearningAPI – Logistic Regression

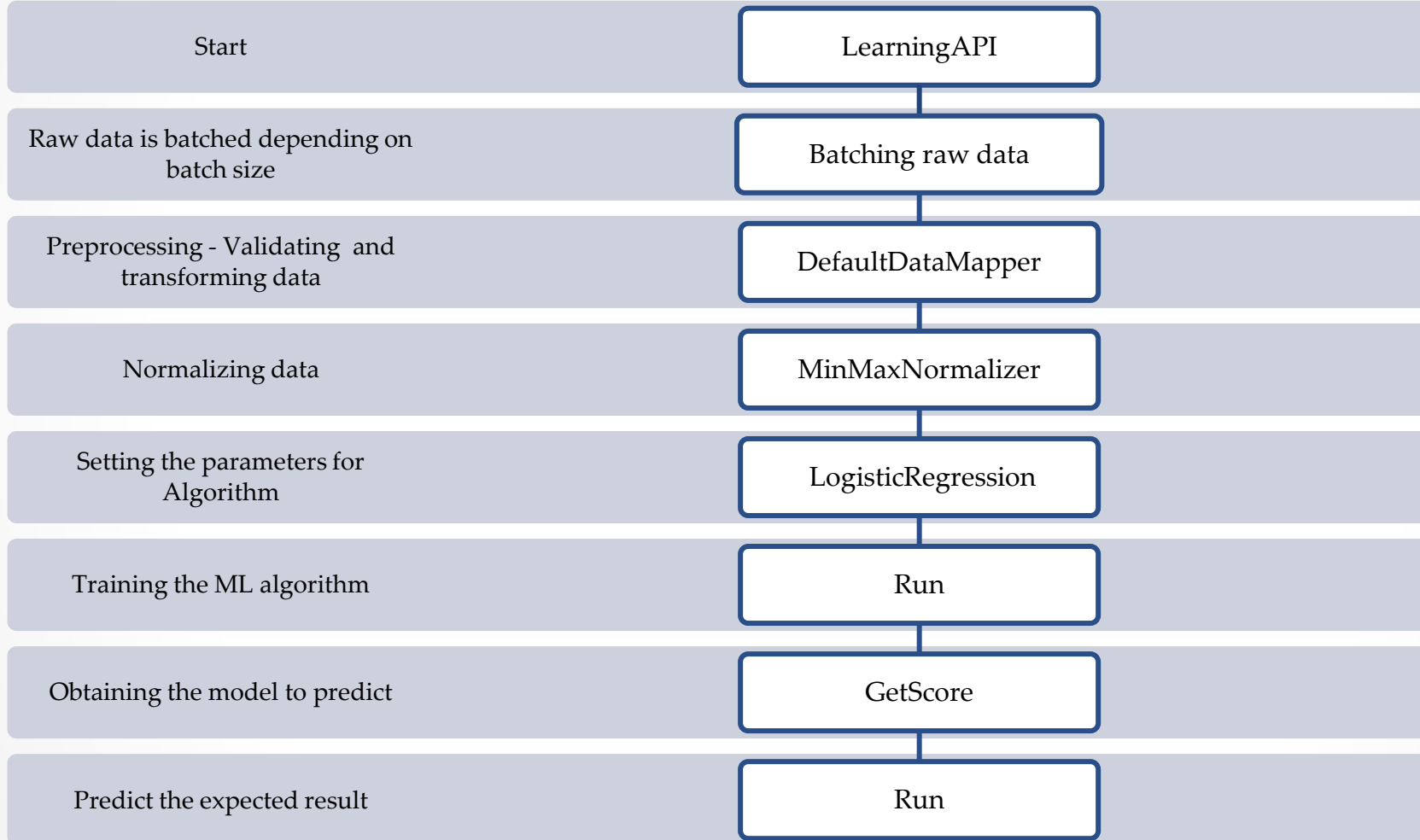
- Normal Run



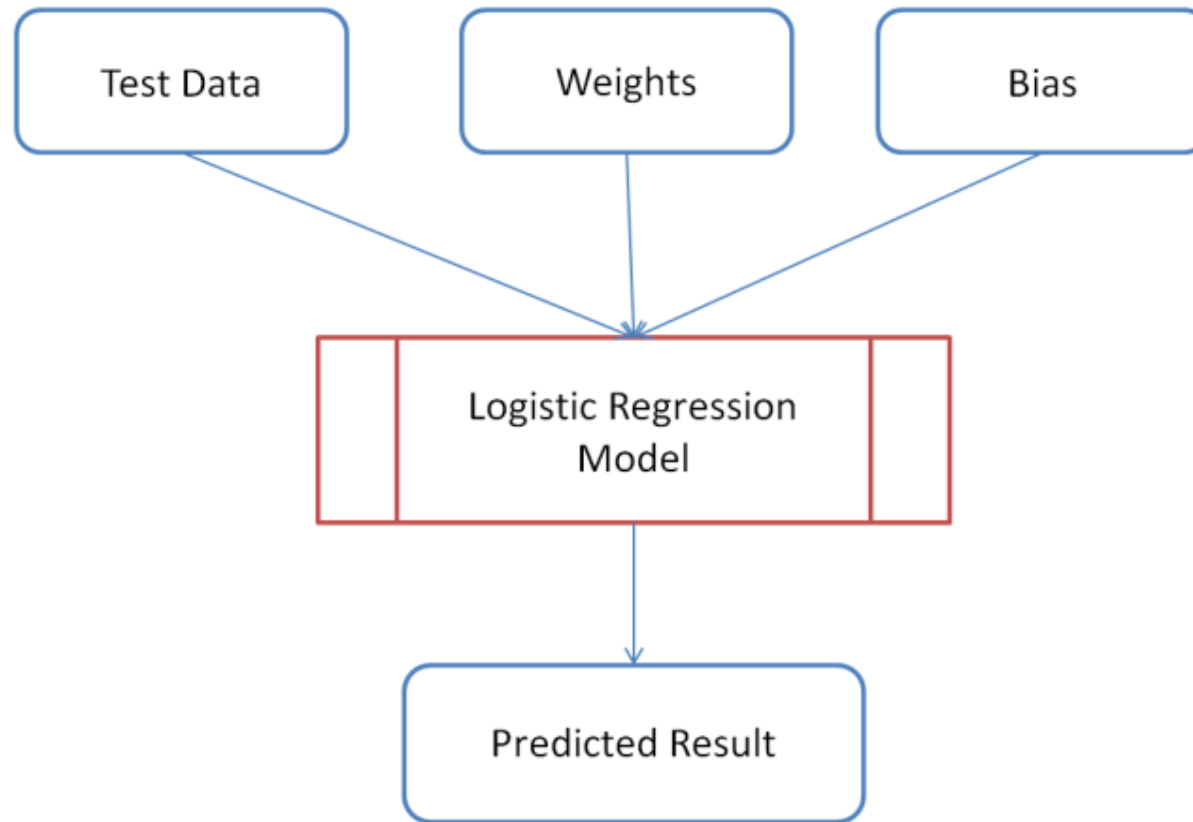
- Batch Run



# Logistic Regression Pipeline Modules

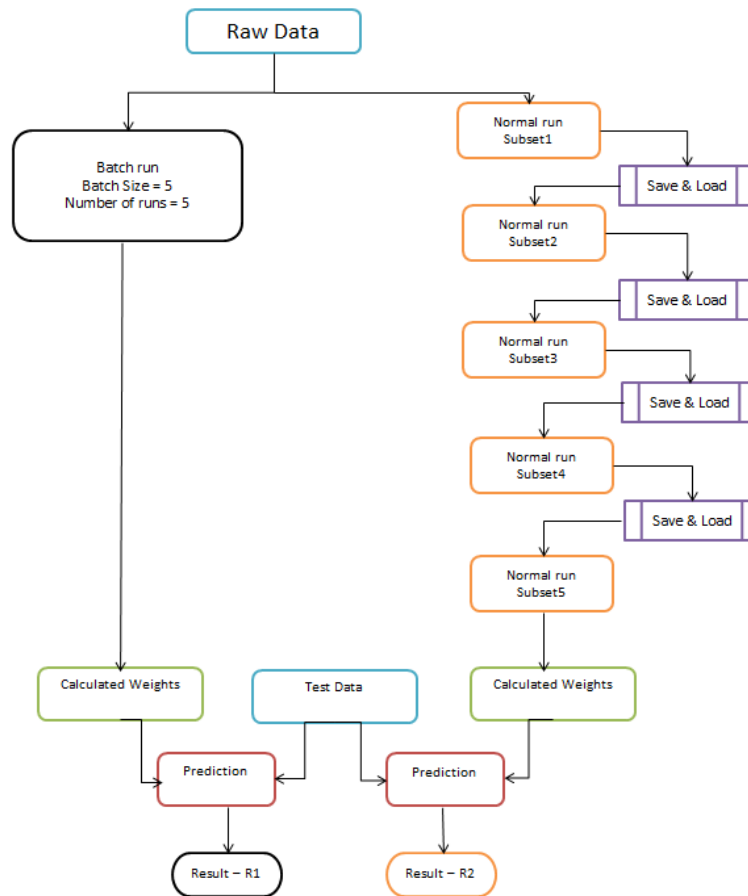


# Unit Test Flow Chart



The flowchart for Unit Test

# Unit Test Verification Method



# Unit Test Cases executed

	Name	Number of data rows	Number of features	Test(Pass/Fail)
1	LogisticRegressionBatchTests	25	4	Passed
2	LogisticRegressionBatchTests2 (with different batch size)	25	4	Passed
3	LogisticRegressionVerification (with subset of 5 data in a given time)	25	4	Passed
4	LogisticRegressionBatchwithCSV	397	3	Passed
5	LogisticRegressionVolumeTest	41189	10	Passed



# Reference

- <https://github.com/UniversityOfAppliedSciencesFrankfurt/LearningApi>
- <https://github.com/UniversityOfAppliedSciencesFrankfurt/LearningApi/blob/master/WorkingWithBatches.md>
- <https://machinelearningmastery.com/logistic-regression-tutorial-for-machine-learning/>
- <https://christophm.github.io/interpretable-ml-book/logistic.html>
- <https://medium.com/greyatom/logistic-regression-89e496433063>

# Project Links

- Project Folder:

<https://github.com/UniversityOfAppliedSciencesFrankfurt/LearningApi/tree/logisticregression-batching/LearningApi>

Unit Test:

<https://github.com/UniversityOfAppliedSciencesFrankfurt/LearningApi/tree/logisticregression-batching/LearningApi/test/logisticregression>

Documentation:

<https://github.com/UniversityOfAppliedSciencesFrankfurt/LearningApi/tree/logisticregression-batching/LearningApi/Documentation>