

Machine Learning for Customer churn prediction using big data analytics

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This project involves use of machine learning algorithms to identify customers who are most likely to discontinue using the service or product.

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<https://github.com/cloudmesh/sp17-i524/tree/master/project/S17-IR-2044/report/report.pdf>

CONTENTS

1	Introduction	1
2	Execution Summary	1
3	Workflow	1
4	Deployment	1
5	Benchmarking	1
6	Conclusion	1
7	Acknowledgement	1

INTRODUCTION

We will use Apache Spark[1] machine learning library for fitting a predictive model on a massive dataset. Detailed analysis and modeling will be carried out in Python Programming language.

EXECUTION SUMMARY

The tentative schedule for this project has been outlined below:

1. March 13-March 19, 2017: Create virtual machines on Chameleon, FutureSystems and Jetstream clouds
2. March 13-March 19, 2017: Deploy Hadoop cluster to the clouds and install the required software packages to the clusters and also finalize data.
3. March 20-March 26, 2017: Data Preprocessing and applying transformation to extract features from the data.

4. March 27-April 09, 2017: Use MLlib to train and evaluate various machine learning algorithms and choose best based on various performance metrics.
5. April 10 - April 16, 2017: Create deployable software packages in Python.
6. April 17-April 23, 2017: Complete Project Report.

WORKFLOW

The project will make use of the following four components.

1. Apache Spark
2. Hadoop
3. Spark MLlib

DEPLOYMENT

We will deploy our application using Ansible[2] playbook. Deployment of Master/slave nodes will be done hadoop/spark distributed cluster environment. Different cloud systems that will be used in the project include Chameleon,FutureSystems and JetStream.

BENCHMARKING

Performance of the Hadoop/Spark clusters deployed on different clouds will compared for benchmarking.

CONCLUSION

TBD

ACKNOWLEDGEMENT

TBD

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- [2] "Ansible Documentation," Web Page. [Online]. Available: <http://docs.ansible.com/ansible/index.html>