**Sudha Vaithilingam** **Azure Machine Learning Deep Azure**

**Problem Statement:**

For companies to stay profitable it is important to have a strategy focusing not only on winning new customers but retaining existing customers. If companies can predict which customers are at a risk of leaving (churn), which customers are good candidates for add-ons (upselling) and new products/services (appetency), it would help them optimize their customer relationship and sales/marketing effort and dollars. In this project, I have used Azure Machine Learning to build a Customer Relationship Prediction model to predict churn, appetency and upselling using dataset modeled from KDD Cup 2009.

**Overview of Technology:**

Azure Machine Learning is a fully-managed cloud service that enables you to easily build, deploy, and share predictive analytics solutions. Azure Machine Learning studio is a browser-based, visual drag-and-drop authoring environment which requires no coding.

**High Level Overview of steps:**

1. Create a new project in Azure Machine Learning Studio <https://studio.azureml.net>

2. Select the datasets. Clean the datasets. Combine the datasets

3. Split the dataset into training dataset and test dataset

4. Choose a binary classification model - Two class Decision Forest

5. Train Model using the dataset

6. Score Model to generate predictions based on the trained model

7. Evaluate Model to measure the accuracy of the model

8. Deploy model as a web service

**Describe Data Set:**

Sample datasets available in Azure Machine Learning Studio modeled from <http://www.kdd.org/kdd-cup/view/kdd-cup-2009/Data>

CRM dataset Shared, Size:25 MB, Format: GenericTSV

CRM upselling Labels Shared, Size:192KB, Format: GenericTSVNoHeader

CRM Appetency Labels Shared, Size:194KB, Format: GenericTSVNoHeader

CRM Churn Labels Shared, Size:192KB, Format: GenericTSVNoHeader

**Hardware:**

Windows 7 64 bit on Intel Core i5 CPU @2.40Ghz, 16.0 GB RAM

**Software:**

Azure Machine Learning Studio <https://studio.azureml.net>

**References:**

<https://docs.microsoft.com/en-us/azure/machine-learning/studio/>

<https://gallery.cortanaintelligence.com/>

<http://download.microsoft.com/download/3/B/9/3B9FBA69-8AAD-4707-830F-6C70A545C389/Introducing_Azure_Machine_Learning.pdf>

**YouTube URLs:**

Short: <https://youtu.be/mkPC1X_rWmg>

Long: <https://youtu.be/S5AlFwjn5-8>

**Lessons Learned & Pros/Cons**

**Pros:** Easy to use UI – drag and drop modules to canvas. No coding required. Fast creation and execution of new experiments. Change classifiers and run experiments easily to select the best model. Good tool for machine learning beginners. **Cons:** Modules are a black box.