TU 257 – Fundamentals of Data Science

Data Analytics

Lab 6 – Classification – Part - 2

Brendan Tierney

Agenda

- Exercise 1 – Demo Notebook 1 – KNN, SVM, Nnet
- Exercise 2 – Demo Notebook 2 – Confusion Matrix, ROC chart
- Exercise 3 – K-fold Cross Validation
- Assignment

- Reminder
  - For all Lab you should be adding your own notes to them
    - Using Python Comments
    - Using cells as Markdown

  - Add your own notes/comments – What makes sense to you
  - This will help with your Understanding of what is happening
  - Why? What does this Show? What do the results mean?
  - …

Exercise 1 – Demo Notebook 1
Exercise 1 – Demo Notebook 2
Exercise 1 – Demo Notebook 3

Same instructions apply to each Demo Notebook

Exercise 1 – Demo Notebook 1, 2 & 3

- Examples/Demo Notebook
  - Download the Demo Notebook
  - Download the Dataset needed for Demo Notebook

  - Run all cells
  - Examine the output generated
  - Follow what is happening from cell-to-cell
  - Add extra annotations/descriptions based on your understanding
    - Enrich the descriptions to make them more meaningful for you

Challenge

To complete these **Challenges**, You will need to re-use some of the code from last week

- Challenge 1 – Compile all the Accuracy Scores for each of the models
  - Which one has the best Accuracy score?

- Challenge 2 – Calculate the ROC and AUC for all the models
  - Which one has the best AUC value?

- Challenge 3 – Using Kfold Cross-Validation for all models
  - Which one has the best average Accuracy score?

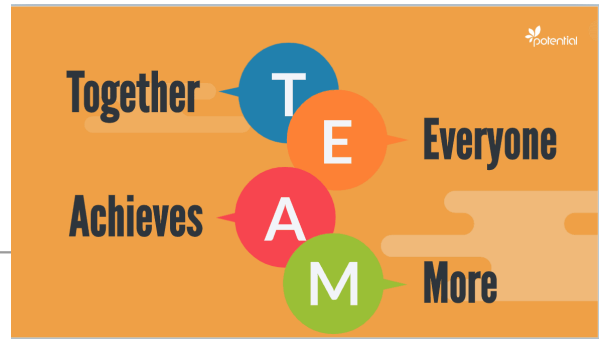
Assignment A

Assignment

- Assignment Time
- Groups of 3 people
  - Can be similar to your group in Data Wrangling module
- Based on Demos and Exercises from this week and next week
  - Build upon your learning
  - Using a different dataset
- See Assignment Handout in BrightSpace for more details
  - Read carefully and make sure you do everything as specified
- See Template for doc/notebook for completing the assignment.
  - This is what you will submit
  - You will be graded on what it contains
  - Add all code, comments, observations, discussions, explanations, etc.
  - Demonstrate understanding, discussion, additional exploration

Assignment

- Start working/thinking about it early -> today, this week
- Review what we have covered todate
- What can you do to showcase your work and understanding of the topics
- What can you add to the data analysis
- …



Any Questions ?

What Now/Next ?

Complete **all** Lab Exercises before Next Week