In-class Brainstorming: Bike Rental Forecast (2)

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1 Introduction

Three months ago (September 14, 2015), we were given the task of conducting bike rental forecasts in our first lecture. Now it is time to propose a solution!

Consider the MS Excel file "Bike.xlsx" provided to you. The sheet "2012" contains the daily rental records of a public bike rental system in a city from 2011/1/1 to 2012/12/31. We now want to use the historical data in 2011 and 2012 to build a model to forecast bike rentals in the first six months in 2013. The sheet "2013" contains the daily information for the same bike rental system from 2013/1/1 to 2013/6/30. Note that while we are provided the weather forecast *temp* and *windspeed*, *atemp* and *humidity* are not available.

2 Tasks

Please use whatever method to put numbers into the *cnt* column in the sheet "2013." Once you are done, send your MS Excel file to the TAs. Having the real numbers of rentals, the TAs will check your forecasts according to the following formula:

$$\text{MAE} = \frac{\sum_{i=1}^{181} |f_i - r_i|}{181},$$

where f_i and r_i are the forecast value and real value of day i, $i = 1, ..., 181$. Smaller MAE means more a accurate forecast.[1]

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[1]Hint: It is hopeful to have MAE < 1000.