**Fly on-time by booking smart**

**Problem statement:**

Airline delays are common and have been a cause of concern for many passengers. Historical data can be analyzed to predict patterns of this delay. We can make smarter booking choices, if we know when to fly, where to fly from, who to fly with and if we have insight into any other factors that we need to watch out for, which may increase the chances of delays.

**Target audience:**

An insight into airline delays is not only useful for travellers to be able to make smarter booking choices but also will be useful to airline carriers to evaluate options to mitigate these delays as well as to travel agencies to be able to service their customers better.

**Data source:**

Data is available from the Research and Innovative Technology Administration (RITA) which coordinates the U.S. Department of Transportation research programs. The following data from RITA/BTS/Transtats will be used for analysis:

1) Airlines On-time/Performance stats (from 1998 - 2014): <http://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=236&DB_Short_Name=On-Time>

2) Aircraft information (B-43 Inventory) (2006 - 2014): <http://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=314>

3) Airport data: <http://stat-computing.org/dataexpo/2009/airports.csv>

4) Carrier data: <http://stat-computing.org/dataexpo/2009/carriers.csv>

**Evaluation Process:**

1) Compare data for 3 years (2006 - 2008) and perform an exploratory analysis of arrival delays. Evaluate the pattern of delays for specific times of the year, specific airports and certain types of carriers.

2) Build a binary classification model to predict arrival delays for a given set of airport and aircraft type using a supervised learning method like SVM Classifier (Support Vector Machine).

**Deliverables:**

1) python code graphing the trends in the data.

2) Slide deck with graph screenshots as well as observations and suggestions based on the trends in data.

3) final project paper with details on the structure of the data.