INTRODUCTION TO
AVIATION DATA SCIENCE

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Duration: 12 weeks
Limit: 30-40
Location and Date/time: March 10th – May 26th Tuesdays 10am-11:30am N210/R115

Registration:
https://forms.gle/oP5BDw2j3T1EeoMN8

Priority: Civil Servants, NAMS Contractors, Other Contractors

Pre-Requisites:
1   Linear Algebra, you can learn basics of this topic here:
http://www.cs.cmu.edu/~zkolter/course/linalg/index.html
2   Basics of Python Programming, many online short-courses are available to learn the basics.

Short Syllabus:
This course teaches you fundamentals of reproducible data science and analytics, probabilistic reasoning & statistical inference, and machine learning to leverage data generated within the large scope of aviation and aeronautics. Course will be taught in four modules: (1) data science basics, (2) supervised reasoning, (3) unsupervised reasoning, and (4) dimensionality reduction and data visualization. We will cover three main areas of aviation data: (1) Airspace Operations, (2) Surface Operations and (3) Flight Safety. We will be using ATD-2, Sherlock, and FOQA data to build the case studies. Course is designed in two phases: (i) lecture and discussion: on the important topics in each module, and (ii) lab: with implementation of the methods learned on the real-world data using Python in Jupyter Hub. Evaluation will be based on a few individual assignments and a group project.

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