

DBA4761 Seminars in Analytics

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Session : Semester 1, 2021/2022

Description

In partnership with OneSixtyTwo AI Hub Pte Ltd, this course has the central goal of helping students to become an effective data scientist as quickly as possible through real-world problems. I will carefully explain the connections between the tools that make the data science modeling workflow possible. Some familiarity with [basic R](#) and corporate finance is assumed. The online lectures will demonstrate the tools, habits and interactions of data scientists and data science projects.

Course Outline

1. Learn how to use the [Tidy Data](#) Principles to perform a discounted cash flow analysis for Saudi Aramco, an oil giant with a value listed of 1.7 Trillion USD. This learning module will be split into two sections:
 - a. Data Sources: Collect DCF input data with PDF Scraping, Web Scraping, API's, and tidy the data into a single DCF Inputs that can be used for Part 2.
 - b. DCF Company Valuation: Model Saudi Aramco's Company Valuation. Perform sensitivity analysis given various risks to our model.
2. Learn how unstructured text data can be analyzed within the [tidyverse ecosystem](#). We will turn to the [Beige Book](#) and the [Economic Report of the President](#). As these reports collect anecdotes from various business across the United States they seem like a grate candidate for fruitful text analysis. At the end of this module, you will understand how to:
 - a. Perform exploratory data analyses of text datasets, including summarization and data visualization
 - b. Understand and implement both tf-idf and sentiment analysis
 - c. Build classification models for text using tidy data principles
3. Data science often involves interactive analyses with code, but code by itself is usually not enough to communicate results in an enterprise setting. In this final module I will teach students the fundamentals how to create [R Markdown](#) scripts for reports and interactive applications:
 - a. Students will gain experience constructing several reports and dashboards from a leading global investment firm provided to the class.
 - b. I will also touch on what students need to deploy [Shiny applications](#) in an enterprise setting.

Reading List

R for Data Science: <https://r4ds.had.co.nz/>

Text Mining with R: <https://www.tidytextmining.com/>

Mastering Shiny: <https://mastering-shiny.org/>

Prerequisites

None

Assessment

Continuous Assessment :

Class Contribution	20%
Individual Assignments	40%
Group Project	40%