INTRODUCTION TO DATA ANALYTICS

Learning Objectives

- *Explain what data analytics is*
- *Understand what a data analyst does*
- *Know how to obtain and scrub data*
- *Navigate the OSEMN framework*

Course Overview

Working with Data

- *Understand what is data*
- *Know the role of a data analyst*
- *Describe the OSEMN framework*

Obtaining and Scrubbing Data

- *Obtain and scrub data*
- *Format data*
- *Understand the OSEMN cycle*

Exploring and Modeling Data

- *Examine data relationships and models*
- *Make predictions with your data*
- *Navigate different types of models*

Interpreting Data

- *Understand the results of your data*
- *Explain your findings*
- *Tell a compelling story*
- *Navigate the OSEMN framework*

Data Analytics vs Data Science

> ***"As you continue to learn about data, you will come across tons of data-related terminology. Among these are two often-confused terms: data analysts and data scientists. These two roles are similar in the sense that they both work with data to gather insights, but how they work with data is what sets them apart. In this reading, you will learn the differences between these two disciplines by reviewing their roles, responsibilities, skills, and backgrounds."***

DATA ANALYSTS

> ***"Data analysts work with structured data to identify patterns, build visualizations, and extract meaningful insights that help organizations make informed decisions."***

Responsibilities

Data analysts are typically responsible for maintaining databases, interpreting data sets, and creating reports that effectively present data trends, patterns, and predictions. Some common tasks include gathering data from various sources, cleaning and organizing data, and presenting findings in easy-to-understand visualizations.

Skills and Tools

- *Foundational mathematics and statistics*
- *Analytical thinking and data visualization*
- *Basic fluency in R, Python, and SQL*
- *SAS, Excel, and business intelligence software*

DATA SCIENTISTS

> ***"Data scientists work with various data types, including structured and unstructured data. They use advanced data techniques, including machine learning and predictive modeling, to design processes, develop models, and extract insights from data."***

Responsibilities

Data scientists are typically responsible for arranging undefined datasets, writing algorithms, building automation systems, and statistical models. Some of their common tasks include gathering and cleaning raw data, creating data visualization tools, dashboards, and reports, and developing code to automate data collection and processing.

Skills and Tools

- *Advanced statistics and predictive analytics*
- *Machine learning and data modeling*
- *High-level, object-oriented programming*
- *Hadoop, MySQL, TensorFlow, and Spark*