Data Science Career Track
Data Science Tracks Overview

Introduction

As you work through the core units of the course, you will hone the skills related to the Data Science Method, the framework used to solve data science problems and identify insights. Once you have honed these skills, you'll have the opportunity to to choose a specialization track. Each track aligns with one type of data scientist role and is matched to the job market. Your third capstone project will focus on topics related to the track that you choose. This document contains an overview of each of the tracks — please use it to identify the track that you'd most like to pursue.

General Data Science Track

This track will prepare you to apply for entry-level data scientist roles across a wide variety of business domains and geographical locations. You'll build on the foundational skills you learned in the core units and tackle more advanced topics like working with Big Data and software engineering best practices. Topics covered in this track include:

- Advanced time series analysis
- Machine learning topics *(please note that you will be asked to choose to learn one of the topics listed below. The other topics will be optional)*
    - Natural Language Processing (NLP)
    - Image processing

- ○ Recommendations systems
- ○ Network analysis
- Data science at scale, including:
  - ○ Hadoop
  - ○ Spark and PySpark
  - ○ Neural networks
- Software engineering for data scientists

Note: Some of the content listed above will be optional to allow you to fully customize your learning path to meet your individual goals and needs.

Capstone for Generalist Track

You'll be asked to develop your third capstone around one of the topics covered in this track, including time series analysis, image processing, or natural language processing. You can choose to use machine learning algorithms you learned in the core units and apply them to Big Data using at-scale approaches like Spark or through the use of a cloud machine learning platform. Implementing data science methods on these advanced platforms is one way to demonstrate your advanced data science knowledge — we encourage you to do this if you choose not to use a dataset that includes more advanced formats like images.

Business Insights Track

The goal of this track is to teach you advanced data visualization and business analytics skills to extract actionable business insights. While you will have the ability to build predictive machine learning models, your primary focus will enter on identifying insights and communicating recommendations based on those insights in an effective and efficient manner. This track will include the following topics:
- Structured thinking, including the use of:
  - ○ Issue trees
  - ○ Value Driver Trees
- Business analytics, including:
  - ○ A/B testing
  - ○ Customer segmentation
  - ○ Data-driven metrics
- Advanced data visualization during which you will learn to use the following tools:
  - ○ Tableau
  - ○ Plotly
  - ○ Bokeh
  - ○ D3.js
- Advanced SQL

Capstone for Business Insider Track
Your third capstone should focus on a business problem that you can use your advanced analytics, visualization, and SQL skills to solve. Remember, this track is all about identifying actionable insights that have a significant impact on a company. While you are not yet working for a company, choosing a topic that solves a business problem will help you demonstrate your skills to potential employers.

Advanced ML Track

The goal of this track is to teach you advanced machine learning skills and concepts, including deep learning and the deployment of machine learning models on standard industry platforms. The advanced ML track includes the following topics:
- Advanced time series analysis
- Deep learning, including:
    - Deep learning implementation
    - Neural network architectures
- Production machine learning methods
    - Deploying models
- Machine learning topics *(please note that you will be asked to choose to learn one or more of the topics listed below. The other topics will be optional)*
    - Natural Language Processing (NLP)
    - Image processing
    - Recommendations systems
    - Network analysis
- Data science at scale, including:
    - Hadoop
    - Spark and PySpark
    - Neural networks

Note: Some of the content listed above will be optional to allow you to fully customize your learning path to meet your individual goals and needs.

Capstone for Advanced Machine Learning Track
You'll be asked to focus your capstone on one of the specialized topics covered in this unit, including (but not limited to) deep learning, image processing, or time series analysis. We encourage you to plan to implement advanced machine learning methods on an advanced platform like Paperspace or an API application.