

6 weeks
Entirely online learning
5-6 hours/week

Access to program content is flexible, available through multiple devices allowing working professionals to easily manage schedules and learn remotely — anytime, anywhere. Participants enrolled in the program obtain access to learning materials via a modular approach, with new content released weekly. Program modules include a variety of teaching instruments, such as:

- Live negotiation simulations
- Video lectures
- Discussions
- Class materials: articles, cases
- Quizzes
- Surveys
- Assignments

Through a series of case studies that lay out an analytics framework, this program helps prepare leaders to leverage data for better business outcomes and lead teams of data scientists.

WEEK 1

Netflix: How Clustering Built a Movies-You'll-Love Feature

How can Netflix and other video-on-demand providers predict customer preferences? Explore a basic movie recommendation engine and observe the details of clustering, the critical enabler that makes it all possible.

WEEK 2

Moneyball: How Linear Regression Built a Winning Team

Learn how a linear regression algorithm can outperform talent scouts for player selection in a manner that outperforms the traditional scouting system as the Oakland A's did in the early 2000s.

Framingham Heart Study: Using Logistic Regression to Save Lives

How do we leverage Framingham Heart Study data to improve public health?

You will consider the ability of logistic regression to save lives by predicting the chance that an individual will develop coronary heart disease.

WEEK 3

Boston Real Estate: Algorithms to Predict Real Estate Values

Leverage a historic Boston real estate data set and a set of simplified approaches and consider the development and launch of an app based on your end user's stated accuracy and interpretability requirements.

Supreme Court: Classification and Regression Trees (CART) to Predict Court Cases

Study how analytics are used to predict Supreme Court decisions. Analyze classification and regression tree (CART) algorithm and how they can outperform the elite community of experts.

WEEK 4

D2Hawkeye: Healthcare Case Management

What if the healthcare system could identify patients before a major health complication and intervene? Learn how predictive modeling can dramatically improve the identification of high-risk patients and save lives.

Twitter: Mining Tweets to Understand Customer Sentiment at Apple

How can companies use analytics to understand their customers? The challenge: can we correctly classify tweets as being negative, positive, or neither as it relates to Apple? Learn how corporate entities use natural language processing to track user sentiment of the "Twitterverse."

WEEK 5

Deep Learning: Training Computers to Get Smarter

Learn how deep learning algorithms enable your machine to read numbers with the open-source frameworks TensorFlow and Keras.

Corporate Strategy: Integer Optimization to Drive Portfolio Decisions for Maximum Value

How do we support a CFO of a fictitious company to chart a course that will simultaneously shift the company to a more high tech focus and maximize net present value (NPV). Construct a mixed integer optimization model and set one of the largest U.S.-based private companies on a path to sustainable growth.

WEEK 6

Inventory Management: Machine Learning Helps with Optimization

Study a new approach to inventory management and consider a machine learning algorithm and optimal decision trees to improve operational performance.

Commercial Airline Insurance Simulation: Finding the Best Policy

Observe an airline as it uses Monte Carlo Simulations to set its fleet insurance policy. Consider insurance policy recommendations for an airline given fleet composition with three objectives:

- Properly insure the airline's assets over a 5-year window
- Minimize cost
- Ensure cash obligations are met in the first year