USC Marshall School of Business

DATA SCIENCES AND OPERATIONS

SPRING

Professor
Lorena Martin

Email
Lmartin1@marshall.usc.edu

When
Spring

Office   **Units**
BRI 400 C   *1.5*

DSO 579 Advanced Sports Performance Analytics
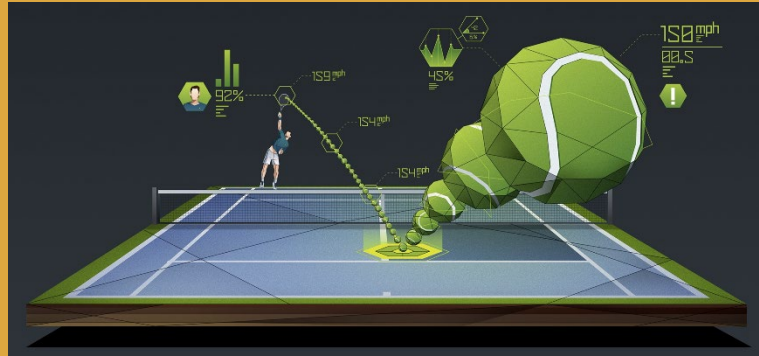

WHO SHOULD TAKE THIS COURSE?

Students wanting to further their knowledge of apply advanced machine learning algorithms to sports performance.

COURSE OBJECTIVES

- Learn how to implement supervised machine learning algorithms in sports.
- Learn how to implement unsupervised machine learning algorithms in sports
- Examination of Ranking Algorithms
- Examine wearable technology implemented in professional sports through analyses.

KEY CONCEPTS

- Principle Component Analysis
- Factor Analysis
- Structural Equation Modeling
- Decision Tree and Random Forests
- K-means Clustering
- Hierarchal Clustering

COURSE DESCRIPTION

In this course we will implement supervised and unsupervised machine learning models to help asses and predict performance. Real life scenarios and data from professional sports will be provided to prepare students entering the sports analytics industry. This course will also provide guidelines to effectively communicate through data visualizations with different key stakeholders in professional sports such as; front office, coaches, support staff, and players.