DSO 562 – *Fraud Analytics*

Section-16275

Professor
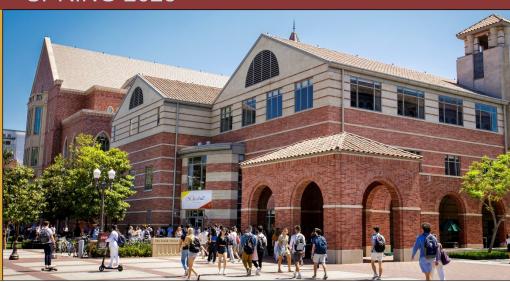*Ash Pahwa*

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When
Mon/ Wed 3:30 – 4:50 PM

Office
TBD

Units
3.0

WHY TAKE THIS COURSE?

Fraud analytics is the use of big data analysis techniques to prevent online financial fraud. It can help financial organizations predict future fraudulent behavior and help them apply fast detection and mitigation of fraudulent activity in real time. Almost all financial institutions are actively hiring people with Fraud Analytics background.

COURSE OBJECTIVES

- Explore the basic usage of fraud detection systems.
- Design a fraud algorithm approach derived from the problem statement.
- Apply the basic algorithmic approaches to both supervised and unsupervised fraud detection methods.
- Apply and tune mainline, advanced machine learning algorithms in a fraud detection system

KEY CONCEPTS

- Data Analysis
- Machine Learning for Fraud Detection
- Benford Law
- Imbalanced Datasets
- Isolation Forest
- kNN + Logistic Regression
- Neural Networks
- Social Media Networks for Fraud

COURSE DESCRIPTION

In this course you will learn how to build the analytics side of fraud detection model systems. We will cover all algorithmic aspects of solving a fraud problem, how to approach and design the algorithmic solution. The course will cover:

- Diagnosing the fraud problem to be solved
- Critically examining the data around the problem
- Structure the organization of the data and create variables, using principles of fraud analytics.
- Build supervised and unsupervised fraud statistical models.
- Utilize multiple measures of model efficacy.