EXperimental Learning

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Big Data and Social Analytics certificate course

MODULE 6 UNIT 1
How data can affect behavior change

MIT BDA Module 6 Unit 1 Video Resource

Learning outcomes:

LO1: Outline the impact of social influence and social incentives on behavior change.

LO2: Discuss potential real-world applications for big data interventions.

LO3: Deduce insights gained from analysis and exploration of behavior change.

LO4: Apply privacy-protecting methods to sensitive data.

Title: How data can affect behavior change

This module explores how data can be used to affect behavior change, as well as the privacy-protecting methods that need to be applied to sensitive data. Before engaging with the video content, read this white paper, titled "Inducing Peer Pressure to Promote Cooperation", to gain an understanding of how the principles covered in this module can be used in a real-world example.

In Video 1, Professor Alex Pentland discusses the impact of social influence and social networks on individual behavior change.

Video 1: Professor Alex Pentland – Social influence and social incentives.
(To download the video, click here.)

A study, titled "The Collective Dynamics of Smoking in a Large Social Network", provides a real-world example of the concepts covered in Video 1. This study shows the effect of social influence on the cessation of smoking within a social network over a period of 32 years.

Note:

The additional articles on behavior change and privacy have been provided for enrichment purposes only, and do not form part of the assessments within this module.

The above content outlines the power of data, and the impact it can have on behavior change. In Video 2, Cameron Kerry discusses the need to implement privacy-protecting methods to sensitive or personal data.

Video 2: Cameron Kerry – Privacy on the ground.
(To download the video, click here.)

In Video 2, Cameron Kerry refers to research conducted by Yves-Alexandre de Montjoye et al. (2015) on privacy protection in the context of human behavior metadata. Through their research, Yves-Alexandre de Montjoye et al. (2015) successfully demonstrate the ability to re-identify individuals based on anonymized credit card metadata. Should you wish to learn more about this research, read the article titled "Unique in the shopping mall: On the re-identifiability of credit card metadata".

Note:

The above article will not be assessed and is for enrichment purposes only.

You are now ready to apply your knowledge

Now that you've engaged with the white paper, Video 1, and Video 2, you are ready to apply your newly gained knowledge by completing the corresponding activities in the Apply unit. You can access these activities by navigating back to your module learning path, or click to access them directly from here:

6.2 Online Activity Submission: Analyzing behavior change
6.3 Small Group Discussion Forum: Real-world interventions

Reference list

Christakis, Nicholas A., and James H. Fowler. 2008. “The Collective Dynamics of Smoking in a Large Social Network.” *N Engl J Med* 358:2249-2258. doi: 10.1056/NEJMsa0706154.

de Montjoye, Yves-Alexandre, Laura Radaelli, Vivek Kumar Singh, and Alex “Sandy” Pentland. 2015. “Unique in the shopping mall: On the reidentifiability of credit card metadata.” *Science* 347:536-539. doi: 10.1126/science.1256297.

Mani, Ankur, Iyad Rahwan, and Alex Pentland. 2013. “Inducing Peer Pressure to Promote Cooperation.” *Scientific Reports* 3:1-9. doi: 10.1038/srep01735.

Tang, John C., Manuel Cebrian, Nicklaus A. Giacobe, Hyun-Woo Kim, Taemie Kim, and Douglas “Beaker” Wickert. 2011. "Reflecting on the DARPA Red Balloon Challenge." *Communications of the ACM* 54:78-85. doi:10.1145/1924421.1924441.