

Leading with Data & Analytics

Program Overview

As the volume of available business data expands, the winners in tomorrow's marketplace will be those who can generate insight from information. Yet, many leaders feel daunted by the sheer amount of data out there. Many others make the critical mistake of looking for patterns in the data they have, instead of framing productive questions to shape the data they need. Competency in this area is so lacking, a recent Gartner study predicted that by 2020, 80% of organizations will initiate deliberate development programs in data literacy.

Many of the ideas, methods and principles that describe the best business data and analytics practices were pioneered by faculty at the University of Chicago Booth School of Business. In this six-week program, participants learn how to "think data" the Booth way. They develop the critical and creative reasoning skills needed to frame a data analytics project, collaborate with data specialists, and ultimately make evidenced-based decisions that drive results — without sacrificing speed and agility.

APPLY THE CHICAGO BOOTH APPROACH TO WIN IN THE MARKETPLACE

Develop the key ingredients of a powerful data analytics strategy: a specific business objective, well developed theories, and a model that points the way to critical data and deep insight

FRAME QUESTIONS TO GENERATE DATA-BASED INSIGHT

Identify specific objectives and related hypotheses to drive data analysis

AVOID BIASES IN INTERPRETING DATA

Sidestep the common pitfall of unconsciously bending data to support false assumptions and preconceptions

TELL THE STORY OF THE DATA

Translate data-driven insights into actionable decisions and drive buy-in by delivering a compelling narrative



**SANJOG
MISRA**



**JEAN-PIERRE
DUBÉ**



**GÜNTER J.
HITSCH**



**DEVIN G.
POPE**

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Key Conceptual Models

- ✓ **Empirical Strategy:** A seven-step process for framing and executing data analytics projects that emphasizes the importance of generating the right questions in order to connect analytic results with critical business decisions.
- ✓ **Model Generation:** How to create an alpha-numeric equation that will allow you to use data to test a theory.
- ✓ **Behavioral Bias:** How common heuristics such as Overconfidence, Projection Bias, and “The Winner’s Curse,” can influence how data is interpreted and how your data-driven proposal will be received by those you hope to influence.
- ✓ **Telling the “Story” of the Data:** How to persuasively integrate data into your proposal without becoming bogged down in minutiae that will be lost on most audiences.
- ✓ **The Future of Data Analytics:** An overview of the evolution of fields like AI, machine learning, and deep learning, and ways they can be leveraged to address business problems today.

Additional Program Features

- ✓ **Practitioner Focus:** In a series of exclusive video interviews, Morgan Hughes (Head of Finance at Airbnb; former VP of Finance at GrubHub):
 - Shares her experiences leveraging business analytics to drive growth and tackle business challenges.
 - Provides practical advice and real-world examples that illustrate how the Empirical Strategy can be used to generate impactful decisions in the face of complex problems.
- ✓ **Key Skills Guides:** Detailed “how-to” guidance on fundamental quantitative skills such as writing equations, dealing with data gaps, and selecting appropriate data methods.
- ✓ **Sample Assignment Deliverables:** Model fictional deliverables that serve as illustrative examples of high-quality finished assignment submissions.

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Curriculum: Week by Week

MODULE

One: Define Your Business Objective

Video Lectures: 50 Minutes

Assignments: 30 Minutes

Two: Articulate Your Theory

Video Lectures: 80 Minutes

Assignments: 90 Minutes

Live Virtual Events: 90 Minutes

Three: Construct Your Model

Video Lectures: 60 Minutes

Assignments: 90 Minutes

Four: Identify Data and Methods

Video Lectures: 70 Minutes

Assignments: 90 Minutes

Live Virtual Events: 90 Minutes

Five: Generate Insight

Video Lectures: 80 Minutes

Assignments: 120 Minutes

Six: Tell the Story of the Data

Video Lectures: 50 Minutes

Assignments: 90 Minutes

Live Virtual Events: 90 Minutes

LECTURES [VIDEOS]

- The Chicago Booth Approach
- From Theory to Model
- From Model to Data
- From Data to Methods
- From Insights to Action

- Pricing in Practice
- Pricing at ZipRecruiter
- The Theory: Value and Willingness-to-Pay
- From Theory to Model: The Role of Demand

- Incentivizing a Salesforce
- The Model: The Virtual Salesperson
- Estimation: Solving for Effort
- Implementation and Adaptation

- What Is Prediction?
- The Predictive Modeling Process
- Personalized Targeting
- Predicting Incremental Value

- Loss vs. Gain Framing
- Overconfidence
- Projection Bias
- The Winner's Curse

- The Four V's of Big Data
- The AI Promise
- Machine Learning and Deep Learning
- Telling the Story of the Data

KEY LEARNING

Professor Sanjog Misra walks participants through the steps in the Empirical Strategy framework, a structured approach to planning and executing data analytics efforts. Participants will use this approach throughout the program to address a critical issue facing their business.

Professor Jean-Pierre Dubé describes how ZipRecruiter used data analytics to address one of the most critical questions any business can face: How much to charge for its products or services. Careful attention is paid to how ZipRecruiter developed a theory of customer behavior, breaking down the links in that decision-chain and teasing out the contributing factors. Participants will demonstrate that same type of rigor as they develop their own theory related to a critical business objective.

Then, Professor Misra explains how to generate a data model by walking participants through a case study from the burgeoning field of people analytics. Here he focuses on translating theories into the quantitative models needed to test those theories. Along the way, he addresses key struggle points, such as how to account for "unobservable" factors, like human effort, by leveraging the data you have on hand.

In this module, Professor Günter Hitsch explains some of the data methods and tools needed to understand relationships in the data you have, or collect the data you need. Particular attention is paid to the field of customer targeting. While market segmentation and targeting are certainly not new practices, Professor Hitsch demonstrates how data analytics enables much greater precision and reliability than traditional methods.

How can human bias play a role in data analytics? It's all numbers and equations, right? In fact, bias can creep into data analytics in a number of ways, influencing your process, impacting how you interpret results, even affecting how your decision is received by those you hope to influence. In this module, Professor Devin Pope walks through some of the common human biases that can influence a data analytics project and provides helpful tips for mitigating, avoiding (and even leveraging) that influence.

In the final module, Professor Misra explains how to persuasively convey data-based insights to a broad audience. He also provides a guided tour of the future of data analytics, tracing how fields like AI, machine learning, and deep learning have evolved and the ways they are being leveraged to address business problems. This provides participants with a practical vocabulary they can use to explore these approaches with data professionals when addressing future challenges.

* Module = 1 Week **Live Events may be subject to change

NOTE: Orientation Pre-Requisite Work (90 minutes) and Final Presentation at end of program (90 minutes).

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Project Examples

NAME	DESCRIPTION	PROJECTED BUSINESS IMPACT	PROJECTED FINANCIAL IMPACT
Developing Data Driven Price Modelling to Improve Business Profitability	An SVP of Product Management at an Industrial company leveraged regression analysis to improve prices of existing products by applying weights to factors impacting prices such as micro level, fraction, pack size, transportation and payment terms and treatment.	Improve Profitability	\$6,250,000
Discounting and Promotions Effectiveness	A Sr. Manager of Analytics at a Food & Beverages company wanted to explore how efficiently their organization's discounting programs influenced cost-to-serve outcomes and designed an analysis to measure the "incentivized cost-to-serve" of various combinations of programs, products, and customers.	Increased Efficiency	\$625,000
ROI of Direct Mail Marketing	A Manager of Client Solutions at a Manufacturing company analyzed the financial value of direct mail efforts used to promote seminars to determine whether it is more or less impactful and cost-effective than email campaigns.	Increased Efficiency	\$325,000
Improving Website Retention	A VP of Marketing at a Technology company analyzed website retention with the goal of improving the experience for current users and driving new users to the site. This allowed the organization to understand what users find most valuable in order to better focus future development efforts.	Increased Customer Loyalty	Currently Measuring