

Artificial Intelligence/Machine Learning & SC Planning

BRIEF ABSTRACT

Companies are awash in data, and fast-evolving analytics using Artificial Intelligence (AI) and Machine Learning (ML) technologies can turn this mass of data into actionable information that ultimately increases competitiveness.

But feedback from industry practitioners suggests that while these advances are being harnessed in the supply chain domain, there is a need for more education on AI/ML methods as well as opportunities to explore their potential for solving key supply chain problems.

The MIT Center for Transportation & Logistics (MIT CTL) Supply Chain Exchange will address these knowledge gaps in a 1 ½-day event at the MIT campus, Cambridge, MA, on November 27-28, 2018.

Building on past roundtable discussions on supply chain analytics, the event in November 2018 will focus on the use of AI/ML in supply chain planning. The discussions will center on specific AI/ML applications in forecasting, demand planning, operations planning and supply chain design.

The event will kick off with a half-day primer on AI/ML technology, that will include examples of applications in logistics, transportation and supply chain management generally. This will be followed by a one-day roundtable, during which attendees will discuss emerging applications of AI/ML in supply chain planning within the areas explored during the initial primer session. Attendees also will share their experiences of applying AI/ML technology.

MIT CTL roundtables are highly interactive events where participants learn from each other. There are no PowerPoint presentations and attendance numbers are carefully managed – the emphasis is on generating a rich discourse in an open environment.

November 27 Workshop Agenda

- 11:30 pm *Registration & lunch*
- 12:30 pm ***Welcome and Introductions*** – Jim Rice
- 1:00 pm ***Fundamentals of AI, ML, Analytics*** - Dr. Daniel Merchan
This first session reviews the fundamentals of artificial intelligence and discusses common applications to business problems.
- 2:00 pm *Break and informal discussion*
- 2:15 pm ***Machine Learning Methods – Supervised Learning*** - Dr. Sergio Caballero
This session introduces supervised learning algorithms. It covers linear regression, k-nearest neighbors, classification and regression trees, and logistic regression. The session focuses on how these methods are used, provides examples, and discusses their strengths and limitations.
- 3:15 pm *Break and informal discussion*
- 3:30 pm ***Machine Learning Methods – Unsupervised Learning*** – Dr. Sergio Caballero and Dr. Daniel Merchan
This session introduces unsupervised learning algorithms. It focuses on how clustering techniques work and provides examples about how these methods are being used in supply chain applications.
- 4:15 pm *Break and informal discussion*
- 4:30 pm ***Advanced and State-of-Art Methods*** - Connor Makowski
This session will address several other methods considered to be advanced and emerging state-of-the-art approaches. Additionally, during this session you will be given the chance to ask open questions about applications to the instructor.
- 5:30 pm *Summation*
- 5:45 pm *Adjournment followed immediately by an informal reception*

November 28 Roundtable Agenda

- 8:00 *Continental breakfast*
- 8:30 am ***Welcome and Introductions*** – Jim Rice
- 8:45 am ***AI/ML in Supply Chain Planning***
- Demand Forecasting*
 Kick-off brief: Carlos Gutierrez and Pamela Armella, Reyes Beverage Group
 Facilitator: Dr. Daniel Merchan
- Revenue Management and Pricing*
 Kick-off brief: Ziqi Ding, Nordstrom
 Facilitator: Dr. Sergio Caballero
- 10:15 am *Break and informal discussion*
- 10:30 am *Transportation Planning*
 Kick-off brief: Matt Morgan, FreightFlows
 Facilitator: Dr. Daniel Merchan
- Inventory Management*
 Facilitator: Dr. Sergio Caballero
- 12:00 pm Lunch
- 1:00 pm ***Looking forward: Autonomous vehicles*** - Dr. Lex Fridman
- 2:15 pm Break
- 2:30 pm ***CAVE Lab demo***
 Facilitator: Connor Makowski
- 3:00 pm ***Getting Started: People, Methods, Tools and Data***
 Facilitator: Jim Rice, Dr. Sergio Caballero and Dr. Daniel Merchan, MIT CTL
- 3:45 pm *Summation*
- 4:00 pm *Adjourn*