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Tomorrow's Business Leaders Learn How to Work with A.I.

Harvard, MIT, Insead say future executives will need to understand how to harness data-crunching technology



Professor Brian Uzzi teaches his Strategy of Leadership to a class of executive M.B.A. students at Northwestern University in Evanston, Ill., on Wednesday. Prof. Uzzi helped develop three courses for M.B.A. candidates that familiarize students with Artificial Intelligence and how it can be applied to business practices. Photo: Taylor Glascock for The Wall Street Journal

By John Simons | Nov. 30, 2016

Artificial intelligence is now on the syllabus at top-tier business schools.

Harvard Business School, Massachusetts Institute of Technology's Sloan School of Management, France's Insead and a handful of other programs recently have added M.B.A. courses on managing the applications and algorithms that help businesses make more informed decisions.

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Artificial intelligence, or AI, combines the reasoning abilities of the human mind with the processing power of computers, such as in Apple Inc.'s Siri personal assistant and Amazon.com Inc.'s Alexa. Companies increasingly are applying the technology to management, developing algorithms that can decipher large data sets or assist executives with decision-making. Spending on AI technologies is expected to grow to \$47 billion in 2020 from a projected \$8 billion this year, according to market-research firm IDC.

Schools say that trend means M.B.A.s will need more than a passing familiarity with artificial intelligence.

Executives must become familiar with methods of managing the development of applications and the design of algorithms across multiple lines of business, said Brian Uzzi, a professor at Northwestern University's Kellogg School of Management who has co-developed three AI courses for M.B.A.s. Mr. Uzzi said the classes also satisfy student demand.

"They want to be recruited by the best tech firms on the planet, they want to build businesses that rely heavily on data analytics, and they want to be leaders and creative artists," said Mr. Uzzi, citing electric-car maker Tesla Motors Inc. and Chief Executive Elon Musk as models.

In April, Kellogg plans to introduce Human and Machine Learning, a 10-week elective course. Classroom exercises will challenge students to "explore how they can scale human effort" with AI and discover "where else they can take these concepts and apply them," said Adam Pah, a Kellogg instructor.

Students will take traditional personality tests and then compare the results with algorithmically created profiles about them gleaned from their likes and dislikes on Facebook. Instructors will ask the students to determine which of the profiles more accurately represent them. The students also will learn how they might use the AI-generated profiles to construct leadership teams with the right mix of personalities and skills.

The broader objective, said Mr. Uzzi, isn't to create a cadre of engineer-executives but to introduce future corporate leaders to the idea of making decisions with the help of machines.

At Stanford University's Graduate School of Business, Mohsen Bayati, a professor of operations, information and technology, expects more technical know-how from M.B.A. students interested taking his class.

Students must pass a probability and statistics exam before they can register for his course, "Business Intelligence from Big Data." The class presents dilemmas that touch on health care, finance, marketing and revenue management and asks students to create algorithms and models to solve the issues.

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As part of a marketing project, Mr. Bayati gives students a public database of information on 100,000 consumers that includes household income, geographic location, home ownership, credit scores and nonprofit donations. Students must create a marketing plan to solicit charitable donations, design prediction models to identify the consumers most likely to donate to charity and then reach them in the most cost-effective manner.

Some lessons teach humility—or at least, the limits of human data analysis. Students analyze consumers' purchasing data and other information and compete against algorithms in judging whether users of a fictional website will click on certain advertising messages.

“Sometimes, they’re right, but in the aggregate, the algorithm wins,” Mr. Bayati said.