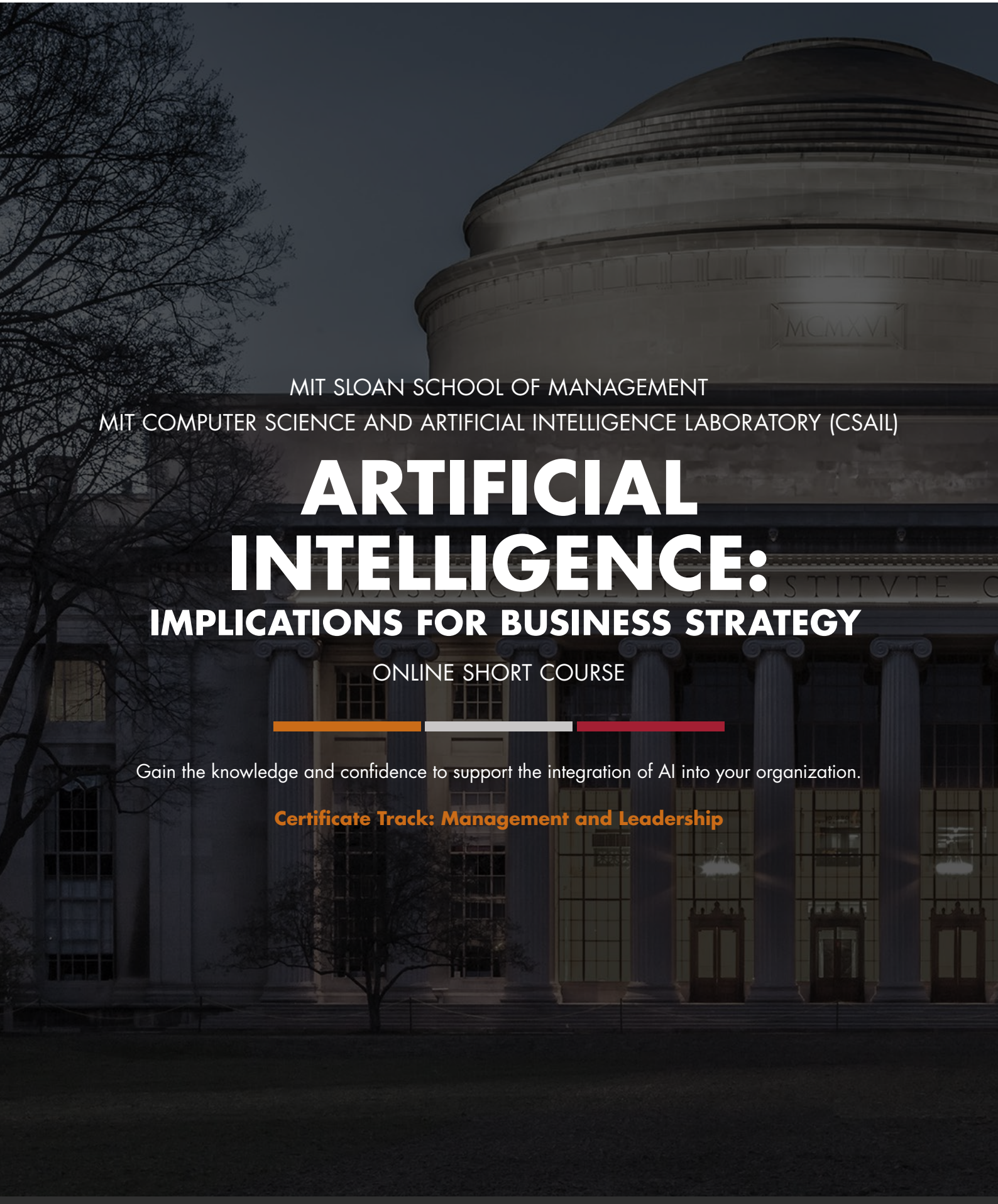
MIT MANAGEMENT EXECUTIVE EDUCATION

MIT CSAIL



MIT SLOAN SCHOOL OF MANAGEMENT

MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY (CSAIL)

ARTIFICIAL INTELLIGENCE:

IMPLICATIONS FOR BUSINESS STRATEGY

ONLINE SHORT COURSE

Gain the knowledge and confidence to support the integration of AI into your organization.

Certificate Track: Management and Leadership

DELIVERED IN COLLABORATION WITH getsmarter™

ABOUT THIS COURSE

What is artificial intelligence (AI)? What does it mean for business? And how can your company take advantage of it? This online program, designed by the MIT Sloan School of Management and the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), will help you answer these questions.

Through an engaging mix of introductions to key technologies, business insights, case examples, and your own business-focused project, your learning journey will bring into sharp focus the reality of central AI technologies today and how they can be harnessed to support your business needs.

Focusing on key AI technologies, such as machine learning, natural language processing, and robotics, the course will help you understand the implications of these new technologies for business strategy, as well as the economic and societal issues they raise. MIT expert instructors examine how artificial intelligence will complement and strengthen our workforce rather than just eliminate jobs. Additionally, the program will emphasize how the collective intelligence of people and computers together can solve business problems that not long ago were considered impossible.

WHAT THE PROGRAM COVERS

This 6-week online program presents you with a foundational understanding of where we are today with AI and how we got here. The focus is on three key AI technologies: machine learning, natural language processing, and robotics.

You'll gain a practical introduction to these key AI technologies and their business implications, equipping you with the knowledge and the confidence you need to transform your organization by converting uncertainties regarding AI into impactful opportunities for business growth. The program does not assume any particular technological background – you'll focus on the organizational and managerial implications of these technologies and how they can be applied in the workplace, rather than on their technical dimensions.

A key element of the course will be an individual project where you develop a plan for how AI could be used in your own organization or some other business context of your choice.

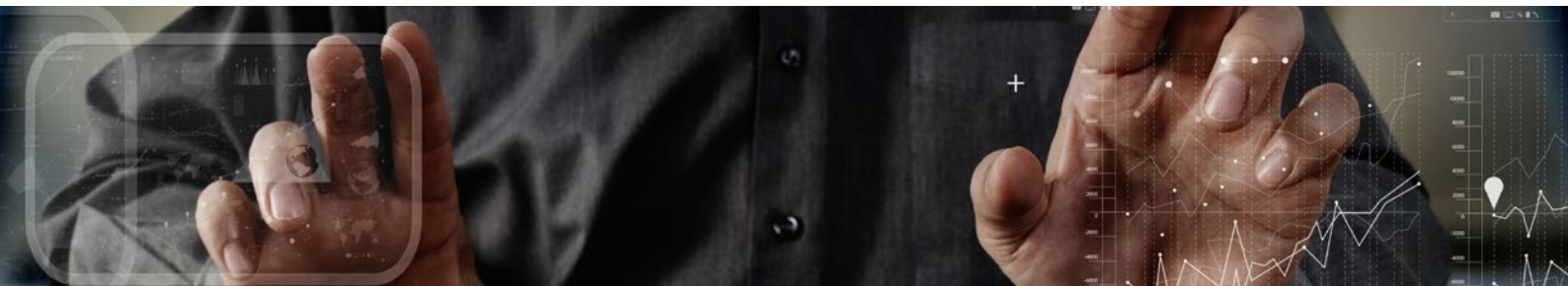
Upon completion of the program, you'll be ready to apply your knowledge to support informed strategic decision making around the use of key AI technologies in your business.

$3,200

6 weeks,
excluding 1 week orientation

6–8 hours/week of self-paced learning, entirely online*

**The recommended weekly time commitment for core content is 4-5 hours, taking into account the busy lifestyles of working professionals, with an additional 2-3 hours recommended for non-compulsory weekly extension activities, should you have the time.*



THIS PROGRAM IS FOR YOU IF:

You're looking for **a grounding in AI and its business applications** in order to innovate in your work and help transform your organization.

You're interested in learning about the selected AI areas of **machine learning, robotics, and natural language processing.**

You want proof of your knowledge in the form of a certificate of completion from the MIT Sloan School of Management.

WHO SHOULD TAKE THIS COURSE?

This program is designed to prepare those with strategic decision-making responsibilities – such as aspiring managers, current managers, and high-level executives – to effectively analyze, articulate, and apply key AI management and leadership insights in their work and that of their teams and organizations.

If you're an experienced business person in a middle management position or higher, or you're able to have an influence on decision making in your role, this program will be relevant to you. Whether you're a manager leading team productivity and looking for a way to unlock new opportunities; a business executive driving innovation, new product development, and market differentiation; a data analyst using or wanting to use AI to understand customer behavior; a marketing and sales specialist producing value-added content to engage with customers; or a data scientist looking to understand business applications when developing AI programs, this program will benefit your work.

"At MIT Sloan Executive Education, we are focused on bridging the energy, engagement, and idea flow of physical in-person teaching and learning into online experiences. We aim to positively modify individual and collective behaviors that participants will take back to their teams and propagate throughout their organizations."

– PAUL MCDONAGH-SMITH, DIGITAL CAPABILITY LEADER, MIT SLOAN EXECUTIVE EDUCATION

WHAT YOU WILL LEARN

This online short course integrates rich, interactive media such as videos, infographics, and e-learning activities, as well as traditional didactic components including written study guides (course notes). There are also opportunities for collaborative learning through discussion forums. The following modules** contribute to the holistic approach your learning path takes:

***Please note that modules are subject to change during course development and review.*

ORIENTATION MODULE

1 WEEK

WELCOME TO YOUR ONLINE CAMPUS

You'll be welcomed with a personal call and get introduced to your online teaching and technical support network. Begin connecting with fellow participants while exploring the navigation and tools of your Online Campus. Be alerted to key milestones in the learning path, and review how your results will be calculated and distributed.

You'll be required to complete your participant profile, confirm your certificate delivery address, and submit a digital copy of your passport/identity document.

MODULE 1

AN INTRODUCTION TO ARTIFICIAL INTELLIGENCE

This introductory module guides you through the evolution of key AI technologies and how they have developed to transform industry and business practice. The relationship between AI and collective intelligence, as well as the implications of this partnership for business strategy and society are also introduced. As part of an ongoing project, you'll begin to consider your own organization in terms of the application of AI technologies.

WHAT IS MIT SLOAN?

Find out more about

THE MIT SLOAN SCHOOL OF MANAGEMENT

MODULE 2

MACHINE LEARNING IN BUSINESS

In this module, you'll explore the core concepts of machine learning – an AI technology which aims to design, understand, and use computer programs to learn from experience. Discover how machine learning can be successfully integrated into business functions through rich case studies and faculty-led videos that examine the opportunities that this subfield of AI affords.
For your ongoing project, you'll propose ideas for the application of machine learning in a business context of your choice.

MODULE 3

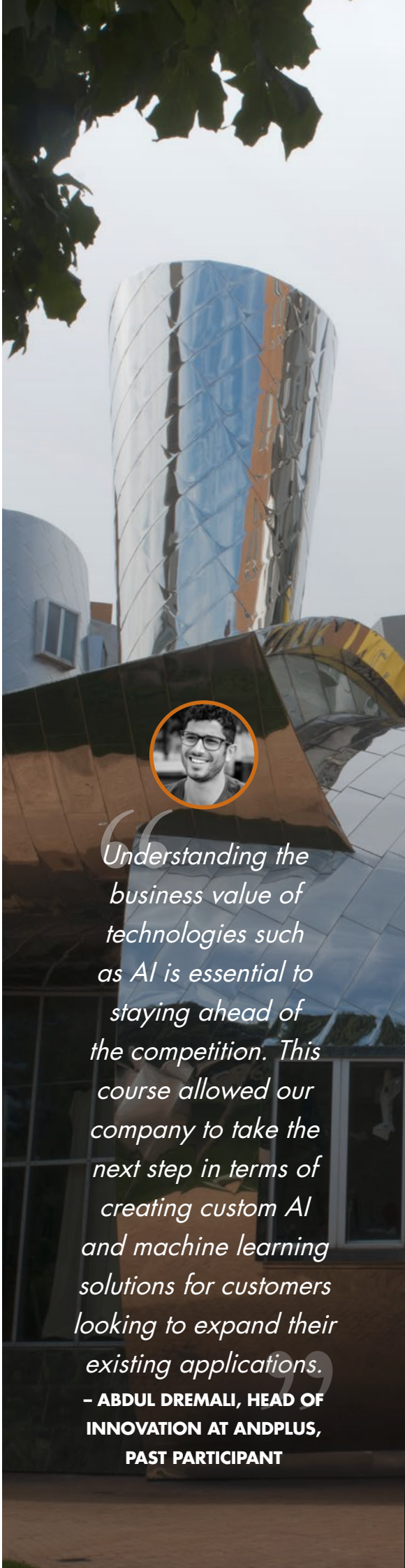
NATURAL LANGUAGE PROCESSING IN BUSINESS

This module is devoted to natural language processing (NLP), an AI technology developed to intelligently process human language. Through rich case studies and faculty-led videos, which explore functions such as machine translation, summarization, and sentiment analysis, you'll learn how NLP can be skillfully deployed in a series of business contexts. For the next part of your project, the focus will shift to NLP and its strategic implementation in a business context of your choice.

MODULE 4

ROBOTICS IN BUSINESS

This module delves into the key elements of robotics as a transformative AI technology, with a focus on automating processes and tasks. Through rich case studies and faculty-led videos that survey robots and autonomous vehicles, you'll learn how robotics can benefit an organization. You'll have the opportunity, once more, to submit ideas regarding the potential for robotics to be deployed in a business context of your choice.



"Understanding the business value of technologies such as AI is essential to staying ahead of the competition. This course allowed our company to take the next step in terms of creating custom AI and machine learning solutions for customers looking to expand their existing applications."

– ABDUL DREMALI, HEAD OF INNOVATION AT ANDPLUS, PAST PARTICIPANT

MODULE 5

ARTIFICIAL INTELLIGENCE IN BUSINESS AND SOCIETY

In this module, you'll see examples of other kinds of AI as well as return to collective intelligence and the human-machine relationship. Here you'll also consider the impact of AI on jobs, and the ethical and social implications of AI integration. You'll be tasked with anticipating and planning for the risks and considerations that may apply to integrating AI in a business context of your choice.

MODULE 6

THE FUTURE OF ARTIFICIAL INTELLIGENCE

This module will allow you to imagine the future of AI and its potential use in your organization. Using what you have learned from the previous modules, you'll create a business roadmap for the strategic implementation of AI and collective intelligence into an organization of your choice.

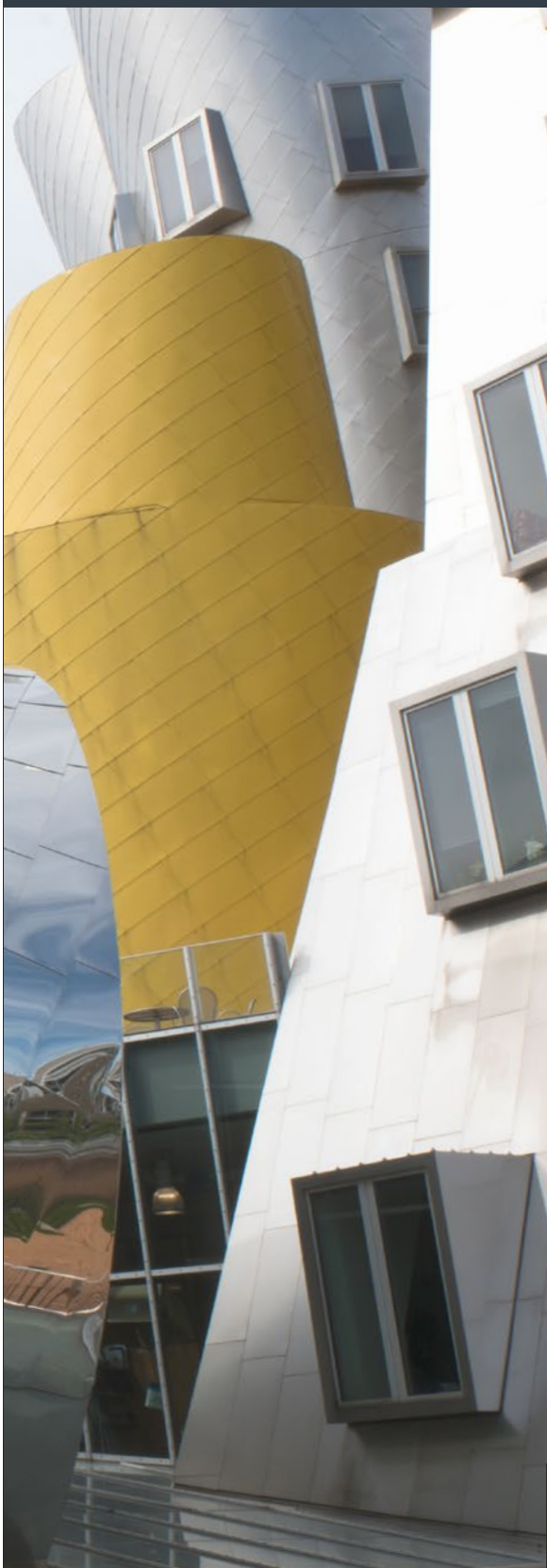
"I think information technology in general is one of the most important factors causing changes in business today, and for most people AI is probably the most mysterious kind of information technology. So this course will help demystify AI for students, and give them the confidence and the basic knowledge they need to take advantage of AI in their own organizations."

– THOMAS MALONE, PATRICK J. MCGOVERN (1959) PROFESSOR OF MANAGEMENT

WHAT IS MIT CSAIL?

Find out more about

THE MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY



WHO YOU'LL LEARN FROM

YOUR FACULTY DIRECTORS

These subject matter experts from MIT Sloan and MIT CSAIL guide the course design and appear in a number of course videos, along with a variety of industry professionals.

THOMAS MALONE

Patrick J McGovern (1959) Professor of Management, and Founding Director of the MIT Center for Collective Intelligence

Thomas W. Malone is a Professor of Information Technology and of Organizational Studies at the MIT Sloan School of Management, and his research focuses on how new organizations can be designed to take advantage of the possibilities provided by information technology.

He has published his groundbreaking research in the book *The Future of Work*, in over 100 articles, research papers, and book chapters. His newest book, *Superminds*, appeared in May 2018. He holds 11 patents, co-founded three software companies, and is quoted in numerous publications such as *Fortune, The New York Times,* and *Wired.*

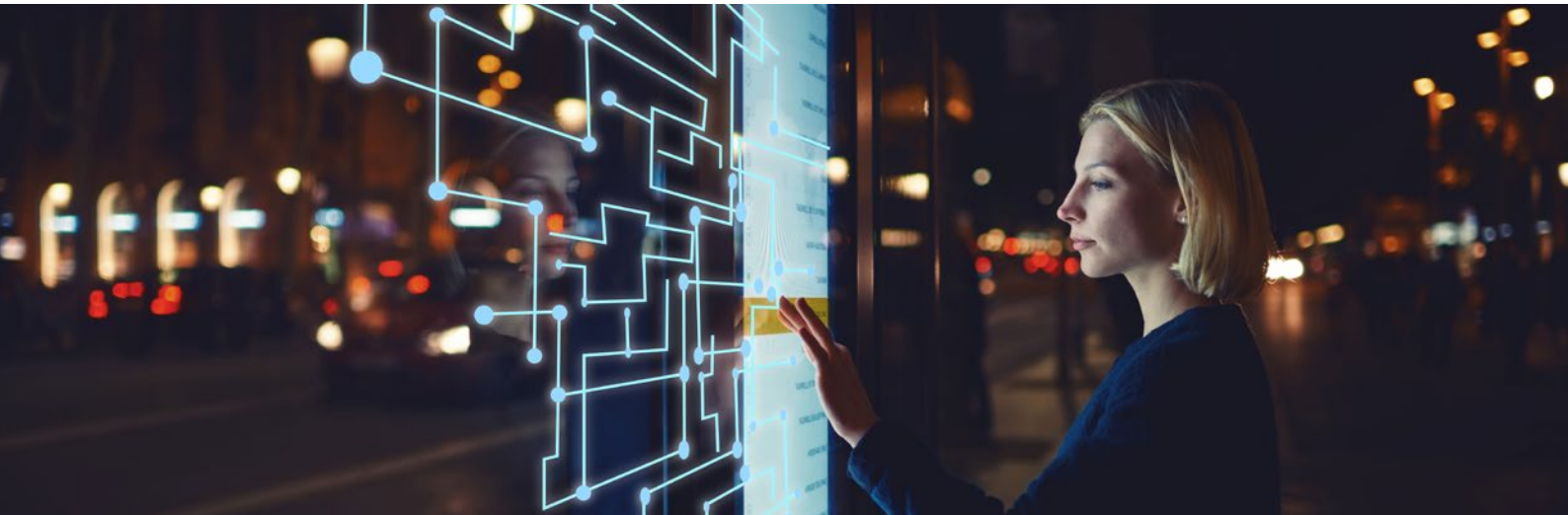
Malone holds a BA from Rice University, two master's degrees and a PhD from Stanford University. He also has degrees in applied mathematics, engineering-economic systems, and psychology.

DANIELA RUS

Director of the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)

Daniela Rus is the *Andrew (1956) and Erna Viterbi Professor of Electrical Engineering and Computer Science* and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. She serves as the Director of the Toyota-CSAIL Joint Research Center and is a member of the science advisory board of the Toyota Research Institute.

Rus' research interests are in robotics, mobile computing, and data science. Rus is a Class of 2002 MacArthur Fellow, a fellow of ACM, AAAI and IEEE, and a member of the National Academy of Engineering and the American Academy of Arts and Sciences. She is the recipient of the 2017 Engelberger Robotics Award from the Robotics Industries Association. She earned her PhD in Computer Science from Cornell University.



MIT FACULTY AND INDUSTRY EXPERTS

ALEX PENTLAND

Toshiba Professor of Media Arts & Sciences

Alex 'Sandy' Pentland is the founding faculty director of the MIT Connection Science Research Initiative, which uses network science to access and change real-world human behavior. He also holds a triple appointment at MIT in Media Arts and Sciences, Engineering Systems Division and with the Sloan School of Management.

In 2012, *Forbes* named him as one of the "seven most powerful data scientists in the world", along with the founders of Google and the CTO of the United States. He served as a member of the Advisory Boards for Google, Nissan, Telefonica, Tencent, and a variety of startup firms, and has co-led the World Economic *Forum Big Data and Personal Data initiatives.*

IYAD RAHWAN

Associate Professor of Media Arts & Sciences at the MIT Media Lab

Iyad Rahwan is the *AT&T Career Development Professor* and an Associate Professor of Media Arts & Sciences at the MIT Media Lab, where he leads the Scalable Cooperation group. Rahwan holds a PhD from the University of Melbourne, Australia, and is an affiliate faculty at the MIT Institute of Data, Systems and Society (IDSS).

Rahwan's work lies at the intersection of the computer and social sciences, with a focus on collective intelligence, large-scale cooperation, and the social aspects of Artificial Intelligence. His work has appeared in major academic journals, including *Science* and *PNAS,* and features regularly in major media outlets, including the *New York Times, The Economist,* and the *Wall Street Journal.*

"We believe that through computation we can make the world a more intelligent, innovative, interesting, and better place to be."

DANIELA RUS, DIRECTOR, MIT CSAIL

TESSA LAU

CTO and Chief Robot Whisperer at Saviok

Tessa Lau is CTO and Chief Robot Whisperer at Savioke, where she's creating a new generation of autonomous service robots. Previously, Lau was a Research Scientist at Willow Garage, where she led an effort to develop simple interfaces for personal robots based. She also spent 11 years at IBM Research developing end-user programming systems for enterprises.

More generally, Lau's research is in the area of intelligent user interfaces: combining techniques from artificial intelligence and human-computer interaction to create systems that enhance human productivity and creativity. She served on the board of CRA-W, the CRA committee on the status of women in computing research. She holds a PhD in Computer Science from the University of Washington.

ANDREW LO

Director of the Laboratory for Financial Engineering at the MIT Sloan School of Management

Andrew W. Lo is the *Charles E. and Susan T. Harris Professor,* a Professor of Finance, and the Director of the Laboratory for Financial Engineering at the MIT Sloan School of Management. Lo holds a BA in economics from Yale University as well as an AM and a PhD in economics from Harvard University.

His current research falls into four areas: evolutionary models of behavior and adaptive markets, systemic risk, the dynamics of the hedge funds industry, and healthcare finance. Lo has published numerous articles in finance and economics journals; is a published author, and is currently an associate editor of – among others – the *Financial Analysts Journal* and the *Journal of Portfolio Management.*

RANDALL DAVIS

Professor of Computer Science and Electrical Engineering at MIT

Randall Davis received his undergraduate degree from Dartmouth, graduating summa cum laude, Phi Beta Kappa in 1970, and received a PhD from Stanford in artificial intelligence in 1976. He has served as Associate Director of MIT's Artificial Intelligence Laboratory (1993-1998), as a Research Director of CSAIL (2003-2007), and as Associate Director of CSAIL (2012-2014).

Davis has been a seminal contributor to the fields of knowledge-based systems and human-computer interaction. He and his research group are developing advanced tools that permit natural multimodal interaction with computers by creating software that understands users as they sketch, gesture, and talk. He is a published author and has served on the Scientific Advisory Board of the US Air Force.

FRANK LEVY

Professor Emeritus of Urban Economics at MIT DUSP

Frank Levy is an economist - "retired from teaching and department meetings but not much else." He works on the impact computers have on jobs and living standards, and on the economics of radiology. In the spring of 2015, Levy concluded a three year term co-organizing the CSAIL/Economist Seminar series at MIT bringing together computer scientists and economists to better understand computerized work. He has also co-organized the De Lange Conference on the Future of Work at Rice University.

Before coming to MIT in 1992, Levy taught at Cal-Berkeley, the University of Maryland at College Park, and worked at the Urban Institute in Washington DC. He is currently a Research Associate in the Department of Health Care Policy, Harvard Medical School and an affiliate faculty member at Duke University Robotics Group.

DAVID AUTOR

Ford Professor of Economics and Associate Head of MIT Economics

David Autor is a Professor and Associate Department Head of the Massachusetts Institute of Technology Department of Economics. He is also a Faculty Research Associate of the National Bureau of Economic Research and Editor in Chief of the *Journal of Economic Perspectives* (published by the American Economic Association), and has served on the Board of Editors at the *American Economic Journal: Applied Economics* and the *Journal of Labor Economics.*

Autor received a BA in Psychology from Tufts University in 1989 and a PhD in Public Policy at Harvard University's Kennedy School of Government in 1999. His current fields of specialization include human capital and earnings inequality, labor market impacts of technological change and globalization, disability insurance and labor supply, and temporary help and other intermediated work arrangements.

DARIO GIL

Vice President of Artificial Intelligence and of Quantum Computing at IBM Research

Dario Gil is a leading technologist and senior executive at IBM. As Vice President of AI and IBM Q, he is responsible for IBM's artificial intelligence research efforts and their commercial quantum computing program (IBM Q).

Prior to his current position, Gil was the VP of Science and Solutions, directing a global organization of 1,500 researchers across 12 laboratories with a broad portfolio of activities spanning the physical sciences the mathematical sciences, and industry solutions based on AI, IoT, Blockchain and Quantum technologies. His research results have appeared in over 20 international journals and conferences and he is the author of numerous patents. He received his PhD in Electrical Engineering and Computer Science from MIT.

YOUR SUCCESS TEAM

Receive a personalized approach to online education that ensures you're supported by GetSmarter throughout your learning journey.

HEAD LEARNING FACILITATOR

A subject expert from GetSmarter and approved by the University, who'll guide you through content-related challenges.

SUCCESS MANAGER

Your one-on-one support at GetSmarter, available during University hours (9am - 5pm EST) to resolve technical and administrative challenges.

GLOBAL SUCCESS TEAM

This team from GetSmarter is available 24/7 to solve your tech-related queries and concerns.

REGINA BARZILAY

Delta Electronics Professor of Electrical Engineering and Computer Science at MIT

Regina Barzilay is a Delta Electronics Professor in the Department of Electrical Engineering and Computer Science and a member of the Computer Science and Artificial Intelligence Laboratory at the Massachusetts Institute of Technology. Her research interests are in natural language processing, and applications of deep learning to chemistry and oncology. She is a recipient of various awards including the NSF Career Award, the MIT Technology Review TR-35 Award, Microsoft Faculty Fellowship and several Best Paper Awards at NAACL and ACL. In 2017, she was awarded MacArthur Fellowship. Regina received her PhD in Computer Science from Columbia University, and spent a year as a postdoc at Cornell University.

PATRICK WINSTON

Ford Professor of Artificial Intelligence and Computer Science at MIT

Professor Winston's research focuses on story understanding and how it contributes to human intelligence. His group's Genesis system reads simple stories, answers and ask questions, identifies concepts, retells persuasively, educates, summarizes, compares, and authors. Winston is a cofounder of Ascent Technology, Inc., which produces sophisticated scheduling, resource allocation, schedule recovery, and workforce management applications, all enabled by AI technology and in use throughout the world in major airports. Professor Winston's research is conducted in the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL). He served as Director of the MIT Artificial Intelligence Laboratory, a predecessor of CSAIL, for 25 years.

TOMMI JAAKKOLA

Thomas Siebel Professor of Electrical Engineering and Computer Science and the Institute for Data, Systems, and Society

Tommi Jaakkola is the Thomas Siebel Professor of Electrical Engineering and Computer Science and the Institute for Data, Systems, and Society at MIT, and a member of the MIT Computer Science and Artificial Intelligence Laboratory. He received MSc in theoretical physics from Helsinki University of Technology, Finland, and PhD from MIT in computational neuroscience. ¸He joined the MIT faculty late 1998. His research focuses on inferential and estimation questions in complex, large-scale combinatorial modeling tasks, especially problems with predominantly incomplete data. On the applied side, his work focuses on machine learning questions appearing in natural language processing, recommender systems, and computational biology. He has received several awards for his publications.

A POWERFUL COLLABORATION

MIT Sloan and MIT CSAIL are collaborating with online education provider GetSmarter to create a new class of learning experience — one that is high-touch, intimate, and personalized for the working professional.

WHAT IS MIT SLOAN?

The MIT Sloan School of Management is one of the world's leading business schools, emphasizing innovation in practice and research, with a mission to develop principled, innovative leaders who improve the world, and to generate ideas that advance management practice. The School's focus on action learning means that students are able to apply concepts learned in the classroom to real-world business settings and, through its collaborative spirit, MIT Sloan welcomes and celebrates diverse viewpoints, creating an environment where new ideas grow and thrive.

WHAT IS MIT SLOAN EXECUTIVE EDUCATION?

MIT Sloan Executive Education offers non-degree executive programs led by MIT Sloan faculty to provide business professionals from around the world with a targeted and flexible means to advance their career development goals and position their organizations for future growth. By collaborating with GetSmarter, a leader in online education, MIT Sloan Executive Education is able to broaden access to its on-campus offerings in a collaborative and engaging format that stays true to the quality of MIT Sloan and MIT as a whole.

WHAT IS MIT CSAIL?

The MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) is the largest research laboratory at MIT and one of the world's most important centers of information technology research, with an AI Lab founded in 1959. MIT CSAIL believes that computation is the key to creating a successful future. Members focus on the future of computing, on making computers more capable and developing the science and capabilities of computing through advances in all aspects of computer science including the theory of computation, systems research and artificial intelligence.

WHAT IS GETSMARTER?

GetSmarter, a wholly-owned subsidiary of 2U, Inc., is a digital education company that collaborates with the world's leading universities to select, design and deliver premium online short courses with a data-driven focus on learning gain.

Technology meets academic rigor in our people-mediated model which enables lifelong learners across the globe to obtain industry-relevant skills that are recognized by the world's most reputable academic institutions.

MIT SLOAN CERTIFICATE OF COMPLETION

This program offers you the opportunity to earn a certificate of completion from one of the world's leading business schools - the MIT Sloan School of Management. Your certificate will be issued in your legal name and couriered to you, at no additional cost, upon successful completion of the program, as per the stipulated requirements. This program also counts towards an MIT Sloan Executive Certificate.

HOW YOU'LL LEARN

Every course is broken down into manageable, weekly modules, designed to accelerate your learning process through diverse learning activities:

- Work through your downloadable and online instructional material
- Interact with your peers and learning facilitators through weekly class-wide forums and reviewed small group discussions
- Enjoy a wide range of interactive content, including video lectures, infographics, live polls, and more
- Investigate rich, real-world case studies
- Apply what you learn each week to quizzes and ongoing project submissions, culminating in the development of your own strategic document

Each module is released weekly, allowing a flexible but structured approach to learning. You'll be supported as you engage in individual activities and group discussions, ensuring you feel confident to submit your best work at each weekly deadline

TECHNICAL REQUIREMENTS

BASIC REQUIREMENTS

In order to complete a course, you'll need a current email account and access to a computer and the internet. You should be familiar with using a computer and accessing the internet, as you may need to read documents in Adobe PDF Reader, view Microsoft PowerPoint presentations, and read and create documents in Microsoft Word. Installing Adobe Flash Player will give you full access to certain course content, such as interactive infographics. However, you'll still have access to this content in the form of a downloadable PDF transcript if you'd prefer not to use Flash.

BROWSER REQUIREMENTS

We recommend that you use Google Chrome as your internet browser when accessing the Online Campus. Although this is not a requirement, we have found that this browser performs best for ease of access to course material. This browser can be downloaded here.

ADDITIONAL REQUIREMENTS

Certain courses may require additional software and resources. These additional software and resource requirements will be communicated to you upon registration and/or at the beginning of the course. Please note that Google, Vimeo, and YouTube may be used in our course delivery, and if these services are blocked in your jurisdiction, you may have difficulty in accessing course content. Please check with a Course Consultant before registering for this course if you have any concerns about this affecting your experience with the Online Campus.

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IMPLICATIONS FOR BUSINESS STRATEGY

ONLINE SHORT COURSE

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REGISTER NOW

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