

MIT
MANAGEMENT
EXECUTIVE EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
SLOAN SCHOOL OF MANAGEMENT

ARTIFICIAL INTELLIGENCE IN HEALTH CARE

ONLINE SHORT COURSE

Develop a grounded understanding of how the use of AI is transforming health care.

ABOUT THIS COURSE

The potential of artificial intelligence (AI) to transform health care — through the work of both organizational leaders and medical professionals — is increasingly evident as more real-world clinical applications emerge.

As patient data sets become larger, manual analysis is becoming less feasible. AI has the power to efficiently process data far beyond our own capacity, and has already enabled innovation in areas including chemotherapy regimens, patient care, breast cancer risk, and even ICU death prediction.

With this program, the MIT Sloan School of Management and the MIT J-Clinic aims to equip health care leaders with a grounded understanding of the potential for AI innovations in the health care industry. The **Artificial Intelligence in Health Care** online short course explores types of AI technology, its applications, limitations, and industry opportunities. Techniques like natural language processing, data analytics, and machine learning will be investigated across contexts such as disease diagnosis and hospital management.

WHAT THE PROGRAM COVERS

Over the course of six weeks, you'll develop a holistic understanding of AI's growing role in health care through an immersive online experience that draws on real-world case studies. You'll explore how AI strategies have already been successfully deployed within the sector, and learn to ask the right questions when evaluating an AI technique for potential use within your own context.

You'll gain an overview of the technology before delving into its practical adoption challenges, with regards to both hospital processes and resource management. Guided by MIT faculty and health care experts, you'll examine the use of AI in diagnosis, patient monitoring and care, and explore how it can be applied to enhance health care data management. You'll also learn to apply an

integrated approach to hospital management and optimization, and develop a framework to assess the viability of using AI within your health care context.



\$2,800



6 weeks,
excluding orientation



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

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.



THIS PROGRAM IS FOR YOU IF YOU WANT TO:



Build an AI decision framework to assess the suitability of an AI-based solution in your health care context.



Understand the potential for AI to transform health care, from disease diagnosis to hospital optimization and patient care.



Learn how adopting an integrated approach to AI can improve hospital management and optimization.

WHO SHOULD TAKE THIS COURSE?

This course aims to empower leaders in both business and medical roles with the knowledge to understand the transformative role of artificial intelligence (AI) in health care. Key learning areas include the basics of machine learning, neural networks, and deep learning. Participants can expect to immediately and directly apply the knowledge gained in this course in their own roles within the health care sector. Professionals working for health care providers will learn to identify the types of problems that AI techniques can help solve.



“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'LL LEARN

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

ORIENTATION MODULE

WELCOME TO YOUR ONLINE CAMPUS

ONE WEEK

You'll be welcomed to the program and 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 student profile, confirm your certificate delivery address, and submit a digital copy of your passport/identity document.

MODULE 1

AI AND MACHINE LEARNING – APPLICATIONS AND FOUNDATIONS

Become familiar with supervised machine learning and the types of problems it may be applied to.

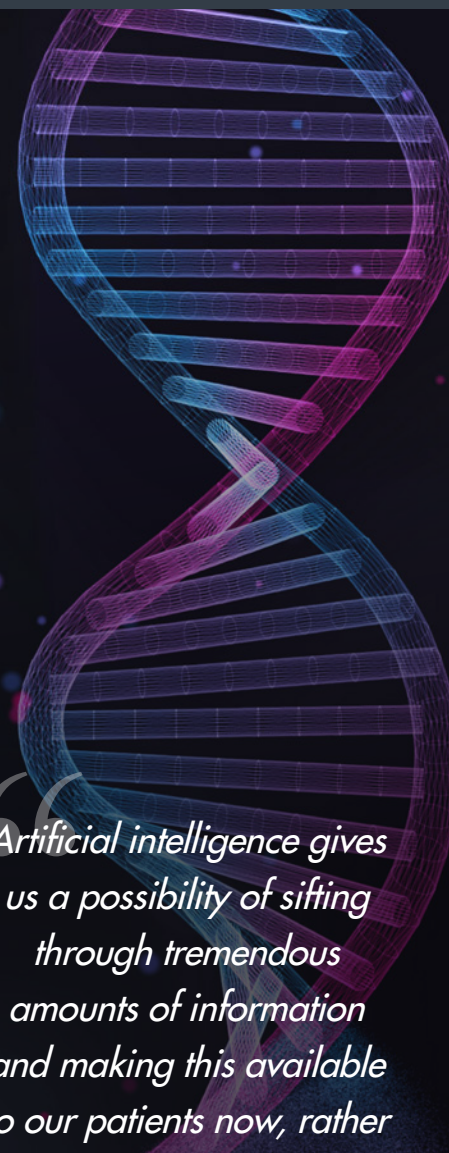
MODULE 2

USING AI FOR DISEASE DIAGNOSIS AND PATIENT MONITORING

Examine real-world applications of AI for diagnosis and patient monitoring.

WHAT IS MIT SLOAN?

Learn more about
**THE MIT SLOAN
SCHOOL OF
MANAGEMENT**



Artificial intelligence gives us a possibility of sifting through tremendous amounts of information and making this available to our patients now, rather than waiting for a computer programmer to build everything themselves.

**CONSTANCE LEHMAN
MD AND PROFESSOR OF
RADIOLOGY, HARVARD
MEDICAL SCHOOL**

MODULE 3

NATURAL LANGUAGE PROCESSING AND DATA ANALYTICS IN HEALTH CARE

Use AI to extract value-adding outcomes from medical literature and pathology reports.

MODULE 4

INTERPRETABILITY IN MACHINE LEARNING — BENEFITS AND CHALLENGES

Appreciate the importance and benefits of interpretable algorithms.

MODULE 5

PATIENT RISK STRATIFICATION AND AUGMENTING CLINICAL WORKFLOWS

Discover how AI can be applied to health care interventions and patient care.

MODULE 6

TAKING AN INTEGRATED APPROACH TO HOSPITAL MANAGEMENT AND OPTIMIZATION

Investigate a holistic approach to optimizing health care processes.

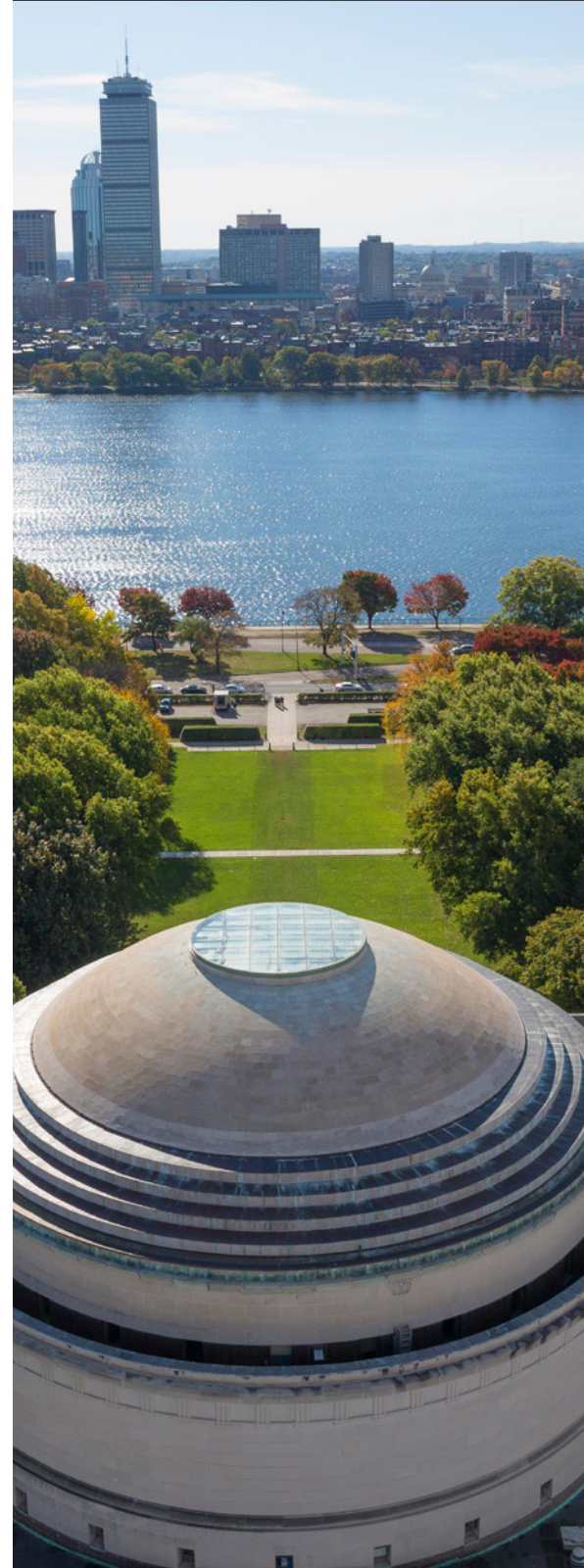

WHAT IS MIT SLOAN?

The MIT Sloan School of Management is one of the world's leading business schools,¹ 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. Through its collaborative spirit, MIT Sloan welcomes and celebrates diverse viewpoints, creating an environment where new ideas grow and thrive.

¹[QS Top Universities](#) (2019).

WHY MIT SLOAN EXECUTIVE EDUCATION?

Learn more about
**THE MIT SLOAN
ADVANTAGE**



WHO YOU'LL LEARN FROM

The design of this MIT online course is guided by faculty who will share their experience and in-depth subject knowledge with you throughout the program.

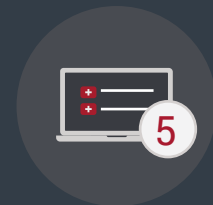
FACULTY DIRECTOR



REGINA BARZILAY

Delta Electronics Professor of Electrical Engineering and Computer Science

Barzilay is a member of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at the Massachusetts Institute of Technology (MIT). Her research interests are in natural language processing, applications of deep learning to chemistry, and oncology. She is a recipient of various awards and received her PhD in computer science from Columbia University. She also spent a year as a postdoc at Cornell University.



Regina Barzilay and a team from MIT CSAIL and Massachusetts General Hospital have created an image-based deep learning model that can use **mammogram data to predict breast cancer up to five years in advance.***

**MIT News (May, 2019).*

MIT FACULTY AND CLINICAL EXPERTS



DIMITRIS BERTSIMAS

Professor of Management, Boeing Leaders for Global Operations and Associate Dean for the Master of Business Analytics, MIT



TOMMI JAAKKOLA

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



DINA KATABI

Andrew and Erna Viterbi Professor of Electrical Engineering and Computer Science at MIT, and the leader of NETMIT research group at CSAIL



DAVID SONTAG

Associate Professor of Electrical Engineering and Computer Science, MIT



COLLIN STULTZ

Professor of Electrical Engineering and Computer Science, Institute for Medical Engineering and Science at MIT



CONSTANCE LEHMAN

MD and Professor of Radiology, Harvard Medical School



KEVIN HUGHES

MD, Co-Director at Avon Comprehensive Breast Evaluation Center, and Medical Director at Bermuda Cancer Genetics and Risk Assessment Clinic

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, approved by the University, will guide you through learning-related challenges.



SUCCESS MANAGER

Your one-on-one support at GetSmarter, available during University hours (9am — 5pm EST) to address technical or administrative questions.



GLOBAL SUCCESS TEAM

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

A POWERFUL COLLABORATION

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

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 deliver its executive programs through a dynamic, interactive, digital learning platform.

WHAT IS GETSMARTER?

GetSmarter, a brand of 2U, Inc., is a digital education provider 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.¹ 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.

¹[QS Top Universities](#) (Feb, 2019).



Health care is mostly about predicting what the patient currently has and what treatment will work. AI provides you with a toolbox of algorithms that can remove the guesswork.

REGINA BARZILAY
DELTA ELECTRONICS PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

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 an AI decision framework that enables you to assess the suitability of AI within your context

TECHNICAL REQUIREMENTS

BASIC REQUIREMENTS

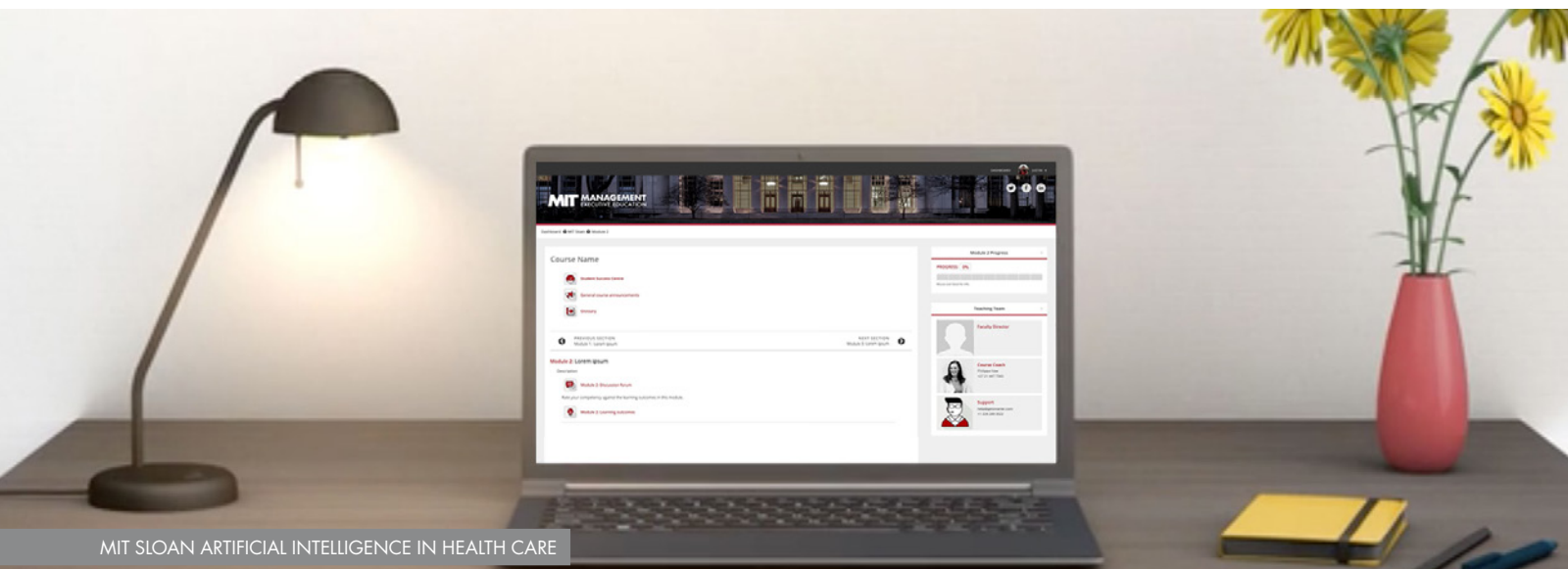
In order to complete a program, you'll need a current email account and access to a computer and the internet, as well as a [PDF Reader](#). You may need to view Microsoft PowerPoint presentations, and read and create documents in Microsoft Word or Excel.

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 program. 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 an Enrollment Adviser before registering for this course if you have any concerns about this affecting your experience with the Online Campus.





MASSACHUSETTS INSTITUTE OF TECHNOLOGY
SLOAN SCHOOL OF MANAGEMENT

ARTIFICIAL INTELLIGENCE IN HEALTH CARE

ONLINE SHORT COURSE

Examine real world applications of AI in health care.

REGISTER NOW

CONTACT US

+1 617 997 4979 | mitsloan@getsmarter.com