In collaboration with

MIT xPRO

جامعة الخليج الطبية
GULF MEDICAL UNIVERSITY
ACADEMIC HEALTH CENTER

THUMBAY INSTITUTE FOR AI IN HEALTHCARE

Certificate Course on ARTIFICIAL INTELLIGENCE IN HEALTHCARE

Who should attend

- Healthcare Professionals
- Clinical Leaders
- Entrepreneurs
- Tech Consultants in Healthcare

Program Fee: 2,350$

7 weeks
5–7 hours per week

THUMBAY
GROWTH THROUGH INNOVATION

Why Study

Studying an Artificial Intelligence in Healthcare Certificate offers numerous benefits. Firstly, it equips healthcare professionals with the knowledge to leverage AI tools for enhanced diagnostics, treatment planning, and personalized patient care. Additionally, this certification opens doors to innovative practices, improving operational efficiency and reducing costs in healthcare settings. As the industry evolves, staying informed about AI in healthcare ensures professionals remain competitive and contribute to advancing medical practices. Ultimately, earning this certificate positions individuals at the forefront of transformative healthcare, fostering a deeper understanding of how AI can positively impact patient outcomes and the overall healthcare landscape.

Equip Yourself

Welcome to our Artificial Intelligence in Healthcare Certificate Course! This comprehensive program is designed to equip healthcare professionals with the knowledge and skills needed to navigate the intersection of AI and healthcare.

Throughout this course, you will explore into key topics such as machine learning algorithms, data analytics, and natural language processing tailored specifically for healthcare applications. Gain practical insights into how AI is transforming diagnostics, personalized medicine, and healthcare operations.

Our expert-led modules provide hands-on experience with cutting-edge tools and technologies, empowering you to harness the power of AI for improved patient outcomes, streamlined workflows, and enhanced decision-making.

Empowering Healthcare Professionals: Unleashing the Potential of AI in Healthcare

Program Schedule

The 7-week AI in Healthcare program offered by MIT xPRO is designed to help you to:

- Break down the design process of an AI product into clear stages
- Grasp the fundamentals of various technologies within AI
- Design an AI product to solve a healthcare problem

Module 1: The Stages of Designing an AI Product

The introductory module focuses on the basic structure of AI product design. You will learn the four stages of designing an AI product and identify desired AI behavior, business and technical requirements, value, and a software development plan.

This module will also teach you how to:

- Identify the design stages and their purposes
- Find the right AI technology to improve a business purposes
- Appraise the technical as well as business requirements for a product
- Identify the long-term advantages and limitations of a product
- Analyze the three types of AI cancers and how they affect an AI process or product

Module 2: The Fundamentals and Applications of Machine Learning

The second module is a deep dive into a key AI technology: machine learning. In addition to introducing you to various algorithms, classifiers, decision trees, and more, it will also demonstrate how to:

- Differentiate between various machine learning algorithms and their uses
- Maximize the advantages of training, validation, and testing sets
- Run and analyze the results from Bayesian machine learning algorithms
- Learn to compare machine learning algorithms and identify the ones suitable for application

Module 3: The Fundamentals and Applications of Deep Learning

The third module covers deep learning, including the length and breadth of neural networks and applications such as drug discovery and cancer cure research. In addition, this module reveals how to:

- Explore the applications that use deep learning algorithms
- Run implementations on convolutional, deep, and recurrent neural network algorithms
- Use neural network simulations to draw conclusions
- Run an implementation of a single- and a multilayer perceptron in Python
- Explore the structure and components of an artificial neuron

Module 4: Designing Artificial Machines to Solve Healthcare Problems

From this module onward, you will add implementation to theory. In Module 4, you will acquire a 360-degree approach to design that covers everything from setting superhuman targets to software methodologies, tool development, research, ethical responsibilities, and possible challenges to these machines. In addition, you will learn how to:

- Assess the accuracy of an AI model
- Understand the approval processes of the Committee on the Use of Humans as Experimental Subjects (COUHES) and various institutional review boards (IRBs) for AI models
- Formulate crowdsourcing data strategies
- Review the superhuman intelligence used in an AI product or service
- Explore the advantages and disadvantages of using an AI technology

Module 5: The Peloton Framework

Here, you will immerse yourself — from complete macro and micro perspectives — in the important Peloton framework, which has helped facilitate modern ingestible robots. Furthermore, you will learn how to:

- Understand the ins and outs of the framework
- Identify the various uses, advantages, and disadvantages of ingestible robots
- Develop an idea for an ingestible robot to solve a healthcare problem
- Study the crowdsourcing data strategies that exceed the limitations of AI

Module 6: Developments in Biomechatronics With AI

This module covers the world of advanced prosthetics, proprioception, and exoskeletons. Besides getting an in-depth understanding of the history, research, developments, and current shortcomings of these areas of innovation, you will also learn how to:

- Identify the mechanisms involved in developing prosthetics for the human body and the communication gaps that occur in a given scenario
- Study the developments in proprioception research and how it has evolved over the course of history
- Understand how communication plays a key role in developing prosthetics
- Learn the advantages of using exoskeletons

Module 7: Frontiers for AI in Healthcare

The final module of the program discusses the immediate challenges and possibilities in the field of healthcare technologies. These include business applications, maintenance challenges, various sources of inspiration, and the potentials of electromagnetic waves and using radio-frequency identification (RFID) chips. In addition, you will learn how to:

- Recognize how data needs to be managed and the importance of flexibility and adaptability while creating an AI product
- Identify the problem of model drift and how to overcome its challenges
- Study the advantages of silo work
- Hypothesize an AI product or service to solve a healthcare problem