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AI for Medicine Specialization

★★★★★ 4.7 2,043 ratings

Pranav Rajpurkar +3 more instructors

Enrolled

Already enrolled

22,507 already enrolled

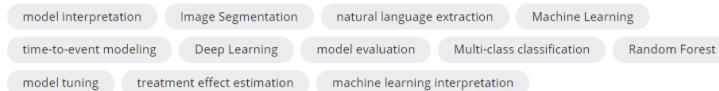
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WHAT YOU WILL LEARN

- Diagnose diseases from x-rays and 3D MRI brain images
- Predict patient survival rates more accurately using tree-based models
- Estimate treatment effects on patients using data from randomized trials
- Automate the task of labeling medical datasets using natural language processing

SKILLS YOU WILL GAIN



Shareable Certificate

Earn a Certificate upon completion

100% online courses

Start instantly and learn at your own schedule.

Flexible Schedule

Set and maintain flexible deadlines.

Intermediate Level

You can program in Python and are comfortable with statistics and probability. The Deep Learning Specialization is recommended but not required.

Approx. 3 months to complete

Suggested 7 hours/week

English

Subtitles: English, French, Portuguese (Brazilian), Russian, Spanish

About this Specialization

53,085 recent views

AI is transforming the practice of medicine. It's helping doctors diagnose patients more accurately, make predictions about patients' future health, and recommend better treatments. This three-course Specialization will give you practical experience in applying machine learning to concrete problems in medicine.

These courses go beyond the foundations of deep learning to teach you the nuances in applying AI to medical use cases. If you are new to deep learning or want to get a deeper foundation of how neural networks work, we recommend taking the [Deep Learning Specialization](#).

Applied Learning Project

Medicine is one of the fastest-growing and important application areas, with unique challenges like handling missing data. You'll start by learning the nuances of working with 2D and 3D medical image data. You'll then apply tree-based models to improve patient survival estimates. You'll also use data from randomized trials to recommend treatments more suited to individual patients. Finally, you'll explore how natural language extraction can more efficiently label medical datasets.



Coursera gives me the flexibility I need to take courses on my own time.

— Chelsea R.



Coursera's rigorous assignments and broad range of subjects encourage me to keep up with my courses. The quality of the teachers keeps me coming back.

— Sandra O.



Coursera gave me confidence and helped me learn anything if I put my mind to it. I break into a new industry.



How the Specialization Works

Take Courses

A Coursera Specialization is a series of courses that helps you master a skill. To begin, enroll in the Specialization directly, or review its courses and choose the one you'd like to start with. When you subscribe to a course that is part of a Specialization, you're automatically subscribed to the full Specialization. It's okay to complete just one course — you can pause your learning or end your subscription at any time. Visit your learner dashboard to track your course enrollments and your progress.

Hands-on Project

Every Specialization includes a hands-on project. You'll need to successfully finish the project(s) to complete the Specialization and earn your certificate. If the Specialization includes a separate course for the hands-on project, you'll need to finish each of the other courses before you can start it.



Earn a Certificate

When you finish every course and complete the hands-on project, you'll earn a Certificate that you can share with prospective employers and your professional network.



There are 3 Courses in this Specialization

COURSE

AI for Medical Diagnosis

1

★★★★★ 4.7 1,189 ratings • 266 reviews

AI is transforming the practice of medicine. It's helping doctors diagnose patients more accurately, make predictions about patients' future health, and recommend better treatments. As an AI practitioner, you have the opportunity to join in this transformation of modern medicine. If you're already familiar with some of the math and coding behind AI algorithms, and are eager to develop your skills further to tackle challenges in the healthcare industry, then this specialization is for you. No prior medical expertise is required!

This program will give you practical experience in applying cutting-edge machine learning techniques to concrete problems in modern medicine: - In Course 1, you will create convolutional neural network image classification and segmentation models to make diagnoses of lung and brain disorders. - In Course 2, you will build risk models and survival estimators for heart disease using statistical methods and a random forest predictor to determine patient prognosis. - In Course 3, you will build a treatment effect predictor, apply model interpretation techniques and use natural language processing to extract information from radiology reports. These courses go beyond the foundations of deep learning to give you insight into the nuances of applying AI to medical use cases. As a learner, you will be set up for success in this program if you are already comfortable with some of the math and coding behind AI algorithms. You don't need to be an AI expert, but a working knowledge of deep neural networks, particularly convolutional networks, and proficiency in Python programming at an intermediate level will be essential. If you are relatively new to machine learning or neural networks, we recommend that you first take the Deep Learning Specialization, offered by deeplearning.ai and taught by Andrew Ng. The demand for AI practitioners with the skills and knowledge to tackle the biggest issues in modern medicine is growing exponentially. Join us in this specialization and begin your journey toward building the future of healthcare.

COURSE

AI for Medical Prognosis

2

★★★★★ 4.7 526 ratings • 91 reviews

AI is transforming the practice of medicine. It's helping doctors diagnose patients more accurately, make predictions about patients' future health, and recommend better treatments. This Specialization will give you practical experience in applying machine learning to concrete problems in medicine.

Machine learning is a powerful tool for prognosis, a branch of medicine that specializes in predicting the future health of patients. In this second course, you'll walk through multiple examples of prognostic tasks. You'll then use decision trees to model non-linear relationships, which are commonly observed in medical data, and apply them to predicting mortality rates more accurately. Finally, you'll learn how to handle missing data, a key real-world challenge. These courses go beyond the foundations of deep learning to teach you the nuances in applying AI to medical use cases. This course focuses on tree-based machine learning, so a foundation in deep learning is not required for this course. However, a foundation in deep learning is highly recommended for course 1 and 3 of this specialization. You can gain a foundation in deep learning by taking the Deep Learning Specialization offered by deeplearning.ai and taught by Andrew Ng.

COURSE

AI For Medical Treatment

3

★★★★★ 4.7 328 ratings • 71 reviews

AI is transforming the practice of medicine. It's helping doctors diagnose patients more accurately, make predictions about patients' future health, and recommend better treatments. This Specialization will give you practical experience in applying machine learning to concrete problems in medicine.

Medical treatment may impact patients differently based on their existing health conditions. In this third course, you'll recommend treatments more suited to individual patients using data from randomized control trials. In the second week, you'll apply machine learning interpretation methods to explain the decision-making of complex machine learning models. Finally, you'll use natural language entity extraction and question-answering methods to automate the task of labeling medical datasets. These courses go beyond the foundations of deep learning to teach you the nuances in applying AI to medical use cases. If you are new to deep learning or want to get a deeper foundation of how neural networks work, we recommend that you take the Deep Learning Specialization.

Instructors



Pranav Rajpurkar

Instructor

PhD Candidate, Stanford University

34,973 Learners
3 Courses



Bora Uyumazturk

Head Teaching Assistant

Researcher, Stanford University

34,973 Learners
3 Courses



Amirhossein Kiani

Teaching Assistant
Stanford University

34,169 Learners
2 Courses



Eddy Shyu

Senior Curriculum Developer
Product Lead at deeplearning.ai

84,657 Learners
7 Courses

Offered by



DeepLearning.AI

Founded by Andrew Ng, DeepLearning.AI is an education technology company that develops a global community of AI talent.

DeepLearning.AI's expert-led educational experiences provide AI practitioners and non-technical professionals with the necessary tools to go all the way from foundational basics to advanced application, empowering them to build an AI-powered future.

Start Learning Today

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- ✓ Graded Assignments with Peer Feedback
- ✓ Graded Quizzes with Feedback
- ✓ Graded Programming Assignments

Enrolled

22,507 already enrolled

Shareable on LinkedIn



You can share your Course Certificates in the Certifications section of your LinkedIn profile, on printed resumes, CVs, or other documents.

Frequently Asked Questions

- What is the refund policy?
- Can I just enroll in a single course?
- Is financial aid available?
- Can I take the course for free?
- Is this course really 100% online? Do I need to attend any classes in person?
- Will I earn university credit for completing the Specialization?

More questions? Visit the [Learner Help Center](#).

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