* [FAQ](https://www.coursera.org/specializations/tensorflow-in-practice" \l "faq)

**WHAT YOU WILL LEARN**

* Best practices for TensorFlow, a popular open-source machine learning framework to train a neural network for a computer vision applications.
* Handle real-world image data and explore strategies to prevent overfitting, including augmentation and dropout.
* Build natural language processing systems using TensorFlow.
* Apply RNNs, GRUs, and LSTMs as you train them using text repositories.

**SKILLS YOU WILL GAIN**

Computer VisionConvolutional Neural NetworkMachine LearningNatural Language ProcessingTensorflowInductive TransferAugmentationDropoutsTokenizationRNNsForecastingTime Series

**About this Specialization**

195,706 recent views

Discover the tools software developers use to build scalable AI-powered algorithms in TensorFlow, a popular open-source machine learning framework.

In this four-course Specialization, you’ll explore exciting opportunities for AI applications. Begin by developing an understanding of how to build and train neural networks. Improve a network’s performance using convolutions as you train it to identify real-world images. You’ll teach machines to understand, analyze, and respond to human speech with natural language processing systems. Learn to process text, represent sentences as vectors, and input data to a neural network. You’ll even train an AI to create original poetry!

AI is already transforming industries across the world. After finishing this Specialization, you’ll be able to apply your new TensorFlow skills to a wide range of problems and projects.

Looking for more advanced TensorFlow content? Check out the new [**TensorFlow: Data and Deployment Specialization**](https://www.coursera.org/specializations/tensorflow-data-and-deployment).

**Applied Learning Project**

In the TensorFlow in Practice Specialization, you'll review lectures, videos, and practice assessments, that will teach you how to use TensorFlow to implement those principles so that you can start building and applying scalable models to real-world problems.

**LEARNER CAREER OUTCOMES**

**40%**

**COURSE**1

**[Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning](https://www.coursera.org/learn/introduction-tensorflow)**



**4.7**

**stars**

7,090 ratings

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1,525 reviews

If you are a software developer who wants to build scalable AI-powered algorithms, you need to understand how to use the tools to build them. This course is part of the upcoming Machine Learning in Tensorflow Specialization and will teach you best practices for using TensorFlow, a popular open-source framework for machine learning.

The Machine Learning course and Deep Learning Specialization from Andrew Ng teach the most important and foundational principles of Machine Learning and Deep Learning. This new deeplearning.ai TensorFlow Specialization teaches you how to use TensorFlow to implement those principles so that you can start building and applying scalable models to real-world problems. To develop a deeper understanding of how neural networks work, we recommend that you take the Deep Learning Specialization.

**[SHOW ALL ABOUT A COURSE IN THIS SPECIALIZATIONSHOW ALL](https://www.coursera.org/specializations/tensorflow-in-practice)**

**COURSE**2

**[Convolutional Neural Networks in TensorFlow](https://www.coursera.org/learn/convolutional-neural-networks-tensorflow)**



**4.7**

**stars**

3,104 ratings

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478 reviews

If you are a software developer who wants to build scalable AI-powered algorithms, you need to understand how to use the tools to build them. This course is part of the upcoming Machine Learning in Tensorflow Specialization and will teach you best practices for using TensorFlow, a popular open-source framework for machine learning.

In Course 2 of the deeplearning.ai TensorFlow Specialization, you will learn advanced techniques to improve the computer vision model you built in Course 1. You will explore how to work with real-world images in different shapes and sizes, visualize the journey of an image through convolutions to understand how a computer “sees” information, plot loss and accuracy, and explore strategies to prevent overfitting, including augmentation and dropout. Finally, Course 2 will introduce you to transfer learning and how learned features can be extracted from models. The Machine Learning course and Deep Learning Specialization from Andrew Ng teach the most important and foundational principles of Machine Learning and Deep Learning. This new deeplearning.ai TensorFlow Specialization teaches you how to use TensorFlow to implement those principles so that you can start building and applying scalable models to real-world problems. To develop a deeper understanding of how neural networks work, we recommend that you take the Deep Learning Specialization.

**[SHOW ALL ABOUT A COURSE IN THIS SPECIALIZATIONSHOW ALL](https://www.coursera.org/specializations/tensorflow-in-practice)**

**COURSE**3

**[Natural Language Processing in TensorFlow](https://www.coursera.org/learn/natural-language-processing-tensorflow)**



**4.6**

**stars**

2,352 ratings

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343 reviews

If you are a software developer who wants to build scalable AI-powered algorithms, you need to understand how to use the tools to build them. This Specialization will teach you best practices for using TensorFlow, a popular open-source framework for machine learning.

In Course 3 of the deeplearning.ai TensorFlow Specialization, you will build natural language processing systems using TensorFlow. You will learn to process text, including tokenizing and representing sentences as vectors, so that they can be input to a neural network. You’ll also learn to apply RNNs, GRUs, and LSTMs in TensorFlow. Finally, you’ll get to train an LSTM on existing text to create original poetry! The Machine Learning course and Deep Learning Specialization from Andrew Ng teach the most important and foundational principles of Machine Learning and Deep Learning. This new deeplearning.ai TensorFlow Specialization teaches you how to use TensorFlow to implement those principles so that you can start building and applying scalable models to real-world problems. To develop a deeper understanding of how neural networks work, we recommend that you take the Deep Learning Specialization.

**[SHOW ALL ABOUT A COURSE IN THIS SPECIALIZATIONSHOW ALL](https://www.coursera.org/specializations/tensorflow-in-practice)**

**COURSE**4

**[Sequences, Time Series and Prediction](https://www.coursera.org/learn/tensorflow-sequences-time-series-and-prediction)**



**4.6**

**stars**

1,583 ratings

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253 reviews

If you are a software developer who wants to build scalable AI-powered algorithms, you need to understand how to use the tools to build them. This Specialization will teach you best practices for using TensorFlow, a popular open-source framework for machine learning.

In this fourth course, you will learn how to build time series models in TensorFlow. You’ll first implement best practices to prepare time series data. You’ll also explore how RNNs and 1D ConvNets can be used for prediction. Finally, you’ll apply everything you’ve learned throughout the Specialization to build a sunspot prediction model using real-world data! The Machine Learning course and Deep Learning Specialization from Andrew Ng teach the most important and foundational principles of Machine Learning and Deep Learning. This new deeplearning.ai TensorFlow Specialization teaches you how to use TensorFlow to implement those principles so that you can start building and applying scalable models to real-world problems. To develop a deeper understanding of how neural networks work, we recommend that you take the Deep Learning Specialization.