



Passing the TensorFlow Developer Certification Exam

(optional)

Where can you get help?

(the materials in this section are based on these resources)

The screenshot shows a web browser window with the title 'How I got TensorFlow Developer Certified (and how you can too)' under the 'MACHINE LEARNING' category. The author is Daniel Bourke, posted on Jun 6, 2020, with a 12 min read time. Below the text is a photograph of Daniel sitting at a desk with two monitors, one showing TensorFlow documentation and the other showing a code editor. A laptop is also visible on the desk.

MACHINE LEARNING

How I got TensorFlow Developer Certified (and how you can too)

I decided to get TensorFlow Developer Certified. So I set myself up with a curriculum to sharpen my skills and took the certification exam a couple of days ago. Turns out, I passed.

Daniel Bourke
Jun 6, 2020 • 12 min read

The screenshot shows a YouTube video player with the title 'How I passed the TensorFlow Developer Certification exam (and how you can too)'. The video has 249,198 views and was posted on Jun 10, 2020. The video content shows Daniel speaking about his TensorFlow developer certification journey. A 'Thank you!' message is displayed on the screen, along with instructions for receiving a certificate if the exam is successfully passed.

#tensorflow #deeplearning #machinelearning

How I passed the TensorFlow Developer Certification exam (and how you can too)

249,198 views • Jun 10, 2020

8.6K 106 SHARE SAVE

Source: [How I got TensorFlow Developer Certified article by Daniel Bourke](#)

Source: [How I passed the TensorFlow Developer Certification exam video by Daniel Bourke](#)

What is the TensorFlow Developer Certification?



Certification == One kind of proof of skill

What is the TensorFlow Developer Certification?

“How much will this house sell for?”



Regression

“Is this a photo of steak or pizza?”



Image classification

“Is this email spam or not spam?”

To: daniel@mrbourke.com
Hey Daniel,

This deep learning course is incredible!
I can't wait to use what I've learned!

Not spam

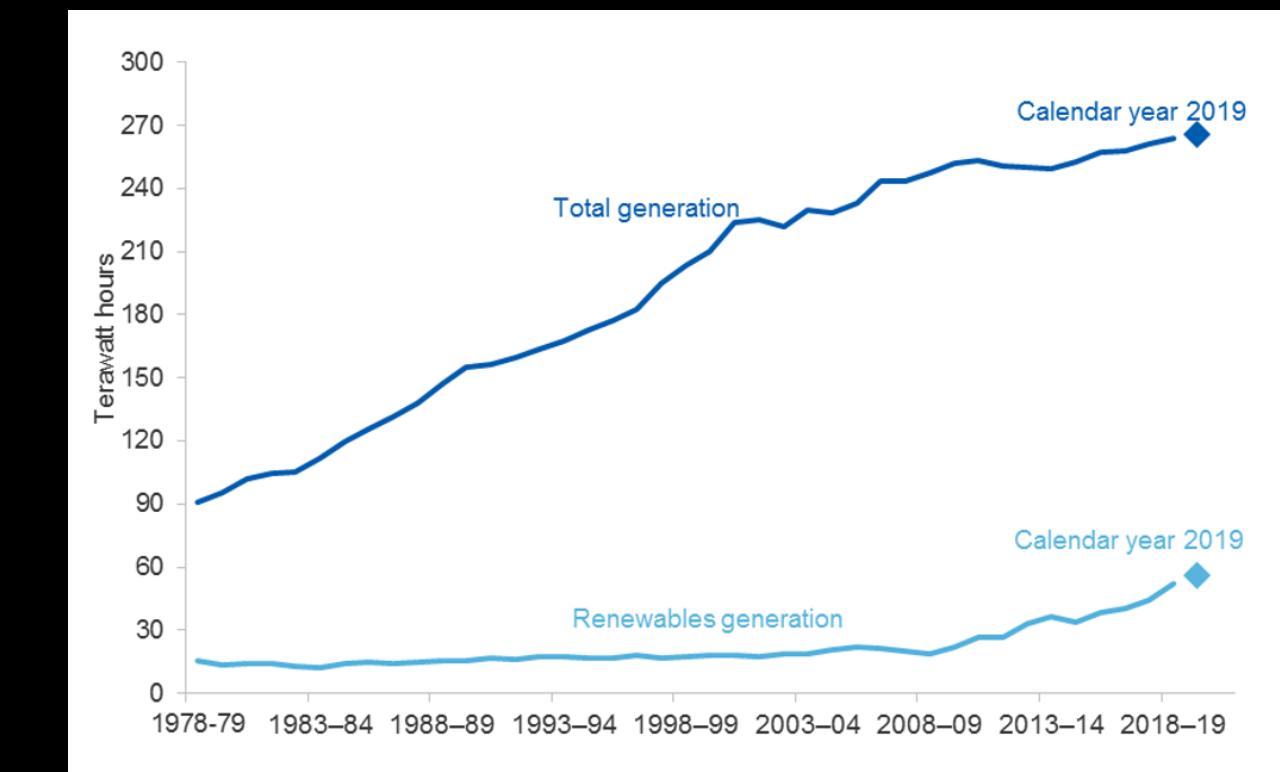
To: daniel@mrbourke.com
Hay daniel...

C0ongratu1ations! U win \$1139239230

Spam

NLP Classification

“How much electricity will be generated next month?”



Time series forecasting

Why the TensorFlow Developer Certificate?



Fun

Why the TensorFlow Developer Certificate?

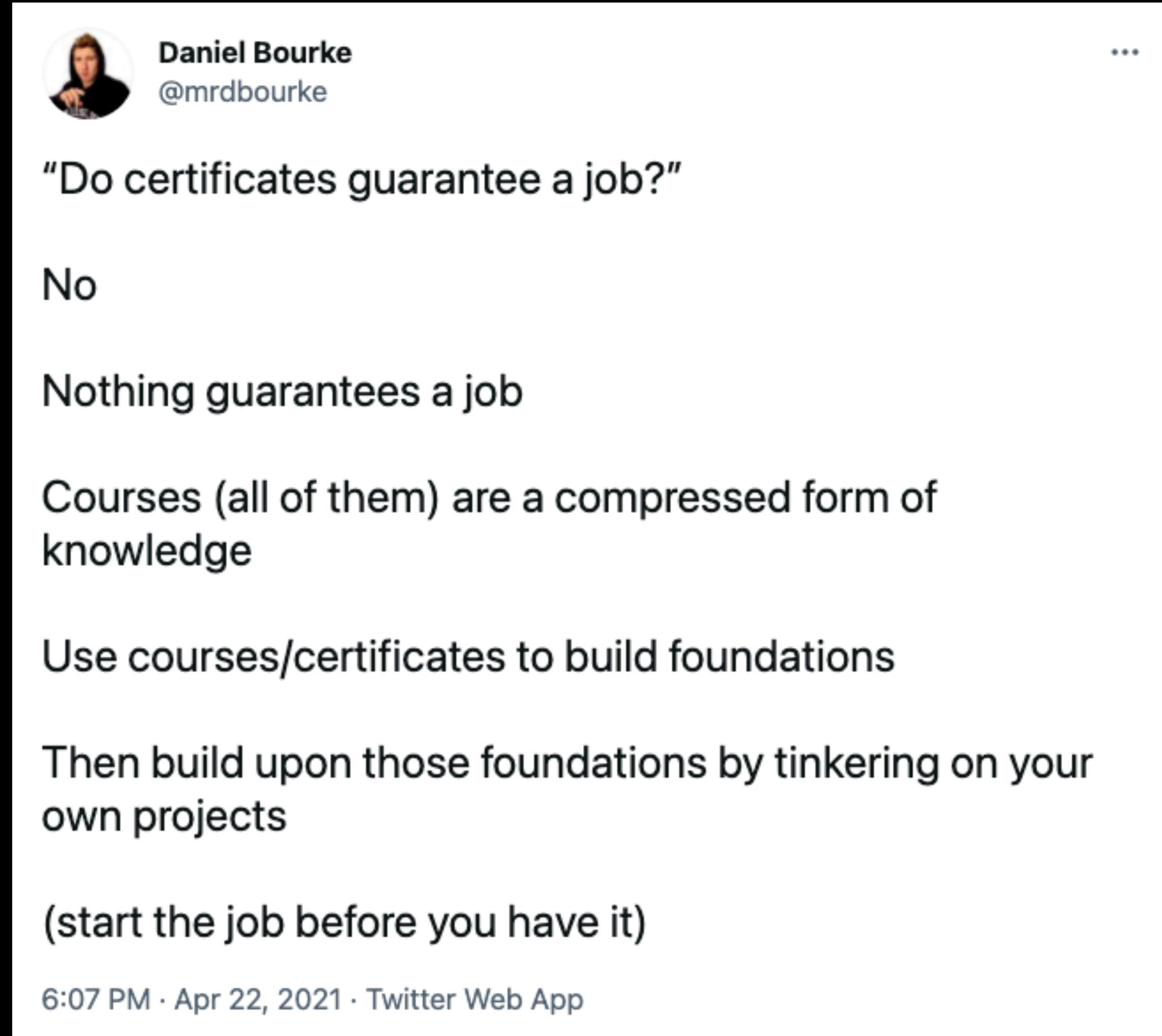


1. Test your skills

2. Showcase skills

**3. TensorFlow
Certificate Network**

Certificates are nice to have, not need to have



Daniel Bourke
@mrdbourke

“Do certificates guarantee a job?”

No

Nothing guarantees a job

Courses (all of them) are a compressed form of knowledge

Use courses/certificates to build foundations

Then build upon those foundations by tinkering on your own projects

(start the job before you have it)

6:07 PM · Apr 22, 2021 · Twitter Web App

Source: [Daniel Bourke Twitter](#)

Start the job before you have it



Things you've done

Start the job before you have it

Find out the ideal kind of role you'd like to go for, then start doing it.

If this sounds outlandish, treat it as part of your research. If you've got the ability to learn data science skills, you've got the ability to figure out what different kinds of roles require.

Source: ["How can a beginner data scientist like me gain experience?" by Daniel Bourke](#)

Portfolio 2.0

(creating things are often free, certificates cost \$\$\$
— the TensorFlow Certificate is \$100USD)

How (brain)?

Go through

The screenshot shows the homepage of the "Zero to Mastery TensorFlow for Deep Learning" website. On the left, there's a sidebar with links to "Home", "Fundamentals", "Computer Vision", "Transfer Learning", "Natural Language Processing", and "Time Series". The main content area features a large circular diagram titled "TensorFlow Developer Certificate" with various modules like "TensorFlow Fundamentals", "Machine Learning Primer", "TensorFlow Certification", "BitPredict", "Time Series", "SkimLit", "Natural Language Processing", "Food Vision", "Transfer Learning", "Convolutional Neural Networks", "Developer Environment", "Neural Network Regression", and "Neural Network Classification". Below the diagram, text explains it's the online book version of the "Zero to Mastery Deep Learning with TensorFlow" course, which teaches foundations of deep learning and TensorFlow and prepares for the TensorFlow Developer Certification exam. It also notes the course is video based.

Source: learntensorflow.io

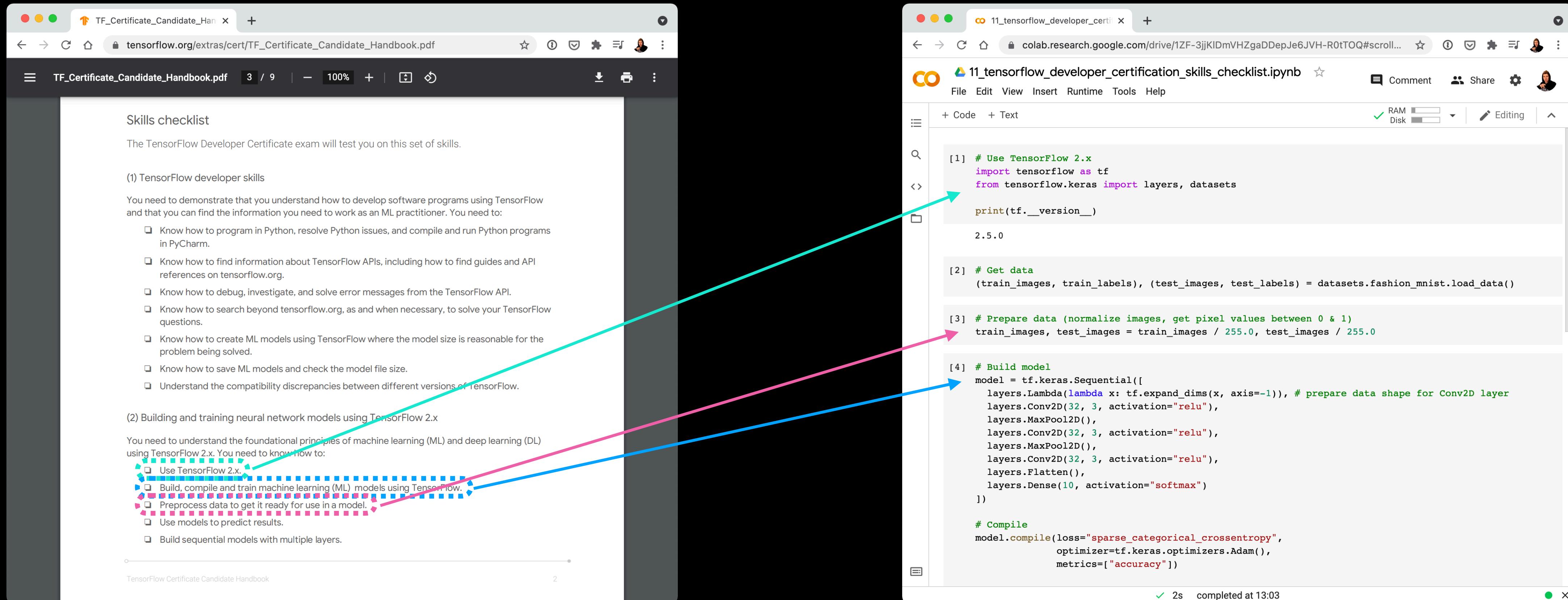
Read

The screenshot shows the first page of the "TF_Certificate_Candidate_Handbook.pdf". It features the TensorFlow logo at the top, followed by the title "TensorFlow Developer Certificate Candidate Handbook". A note below says to review the handbook in its entirety prior to registering and taking the exam. At the bottom, it indicates the document was last updated on October 26, 2020.

Source: [TensorFlow Developer Certificate Handbook](https://tensorflow.org/extras/cert/TF_Certificate_Candidate_Handbook.pdf)

check the link (in case things change)

How (brain)?

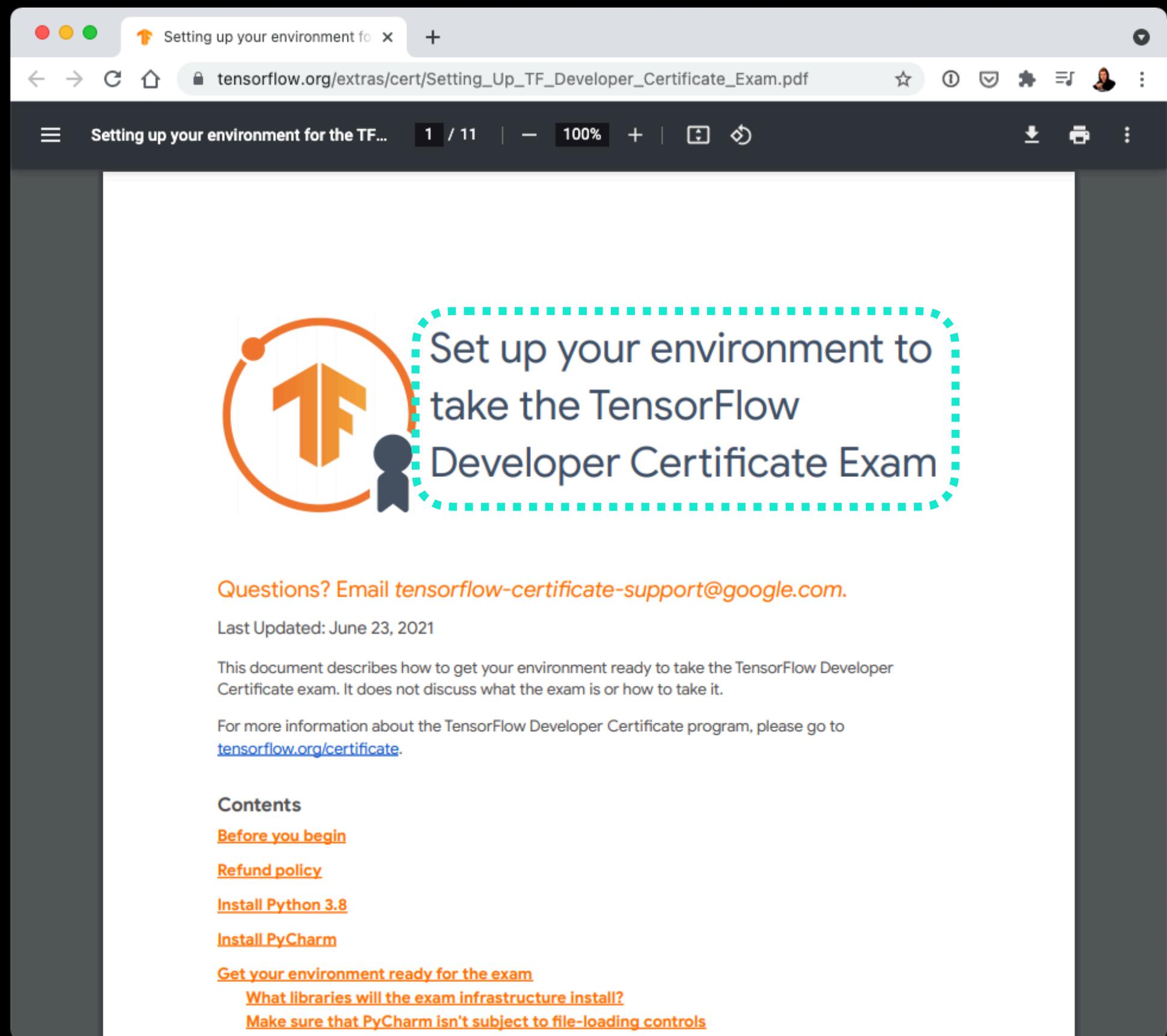


Source: [TensorFlow Developer Certificate Handbook](#)

Map the Skills checklist to a notebook

How (computer)?

Read



Source: [Set up your environment for the TensorFlow Developer Certificate Exam handbook](#)

Practice



Exam takes place in PyCharm (similar to VSCode)

1. Go through PyCharm getting started tutorials
2. Make sure TensorFlow runs in PyCharm (follow the steps in the handbook)

How (computer)?

The screenshot shows the PyCharm IDE interface. The top navigation bar has tabs for 'File', 'Edit', 'Run', 'View', 'Tools', 'Help', and a search icon. Below the navigation bar is a toolbar with icons for file operations like 'New', 'Open', 'Save', and 'Run'. The main area is divided into several panes: a 'Project' pane on the left showing a 'tensorflow_test' project with files like 'image_classification_test.py' and 'test_image_model.h5'; a 'Code' pane containing the Python script 'image_classification_test.py'; a 'Terminal' pane at the bottom showing command-line output; and a 'Status Bar' at the bottom right showing the current file, line number, and other details.

Trained models get submitted in .h5 format.

```
tensorflow_test - image_classification_test.py
image_classification_test.py

1 """ This script should train a TensorFlow model on the fashion MNIST dataset to ~90% test accuracy.
2
3 It'll save the model to the current directory using the ".h5" extension.
4 """
5
6 import tensorflow as tf
7 from tensorflow.keras import datasets, layers
8
9 # Check version of TensorFlow (exam requires a certain version)
10 # See for version: https://www.tensorflow.org/extras/cert/Setting\_Up\_TF\_Developer\_Certificate\_Exam.pdf
11 print(tf.__version__)
12
13 # Get data
14 (train_images, train_labels), (test_images, test_labels) = datasets.fashion_mnist.load_data()
15
16 # Normalize images (get values between 0 & 1)
17 train_images, test_images = train_images / 255.0, test_images / 255.0
18
19 # Check shape of input data
20 # print(train_images.shape)
```

Epoch 6/10
1875/1875 [=====] - 31s 16ms/step - loss: 0.2557 - accuracy: 0.9062 - val_loss: 0.2938 - val_accuracy: 0.8981
Epoch 7/10
1875/1875 [=====] - 30s 16ms/step - loss: 0.2442 - accuracy: 0.9102 - val_loss: 0.2879 - val_accuracy: 0.8976
Epoch 8/10
1875/1875 [=====] - 29s 15ms/step - loss: 0.2325 - accuracy: 0.9151 - val_loss: 0.3039 - val_accuracy: 0.8856
Epoch 9/10
1875/1875 [=====] - 29s 15ms/step - loss: 0.2246 - accuracy: 0.9178 - val_loss: 0.2846 - val_accuracy: 0.8974
Epoch 10/10
1875/1875 [=====] - 30s 16ms/step - loss: 0.2158 - accuracy: 0.9202 - val_loss: 0.2840 - val_accuracy: 0.9039
Evaluating model...
313/313 [=====] - 1s 4ms/step - loss: 0.2840 - accuracy: 0.9039
★ (venv) daniel@Daniels-MacBook-Pro tensorflow_test %

If example model script runs in under 5-10 minutes in PyCharm, your local machine should be good to go.

Troubleshooting tidbits

- **Input and output shapes** — print these out if you're stuck.
- **Input and output datatypes** — TensorFlow usually prefers float32.
- **Output activation functions** — for classification: sigmoid vs softmax, which one should you use?
- **Loss functions** — for classification:
sparse_categorical_crossentropy vs categorical_crossentropy, which one should you use?
- **Ways to improve a model** — if your model isn't performing as well as it should, what can you do?

Where can you get help?

The screenshot shows a web browser window with the title "Preparing for the TensorFlow Developer Certification Exam". The page content includes sections on "What is the TensorFlow Developer Certification?", "Why the TensorFlow Developer Certification?", and a list of reasons to take the exam. It also features a sidebar with a "Table of contents" section containing links to various topics like Preface, What is the TensorFlow Developer Certification?, Why the TensorFlow Developer Certification?, Certificates, How to prepare (your brain) for the TensorFlow Developer Certification, The Skills Checklist, How to prepare (your computer) for the TensorFlow Developer Certification, Troubleshooting tidbits, Questions, and Extra-curriculum.

Source: learntensorflow.io

The screenshot shows a web browser window displaying the TensorFlow Python API documentation for TensorFlow Core v2.5.0. The main content area shows the "Module: tf" documentation, which includes sections for Overview, All Symbols, Python v2.5.0, and a list of module members such as tf, tf.audio, tf.autodiff, tf.autograph, tf.bitwise, tf.compat, tf.config, tf.data, tf.debugging, tf.distribute, tf.dtypes, tf.errors, tf.estimator, tf.experimental, tf.feature_column, tf.graph_util, tf.image, and tf.initializers. On the right side, there is a sidebar titled "Table of contents" with links to TensorFlow, Modules, Classes, Functions, and Other Members. A "Visit Forum" button is also visible.

Source: [TensorFlow Python documentation](https://tensorflow.org/api_docs/python/tf)

What to do after the exam?



“Experiment, experiment, experiment”

“Build, build, build”

Keep Learning

Thank you