

TensorFlow and Keras

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TensorFlow

- ▶ TensorFlow™ is an **open source software library for high performance numerical computation**.
- ▶ Its flexible architecture allows easy deployment of computation across a variety of platforms (**CPUs, GPUs, TPUs**), and from desktops to clusters of servers to mobile and edge devices.
- ▶ Originally developed by researchers and engineers from the Google Brain team within **Google's AI organization**, it comes with strong support for machine learning and deep learning and the flexible numerical computation core is used across many other scientific domains.

<https://www.tensorflow.org/>

TensorFlow: Machine Learning for Everyone



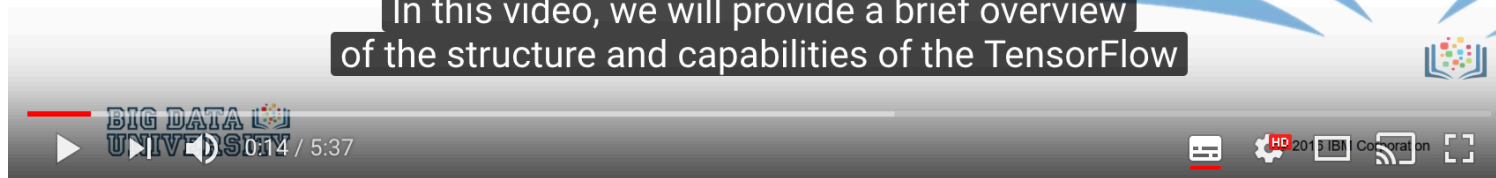
https://www.youtube.com/watch?time_continue=11&v=mWl45NkFBOc

Deep Learning with TensorFlow - Introduction to TensorFlow

Introduction to TensorFlow™



In this video, we will provide a brief overview of the structure and capabilities of the TensorFlow



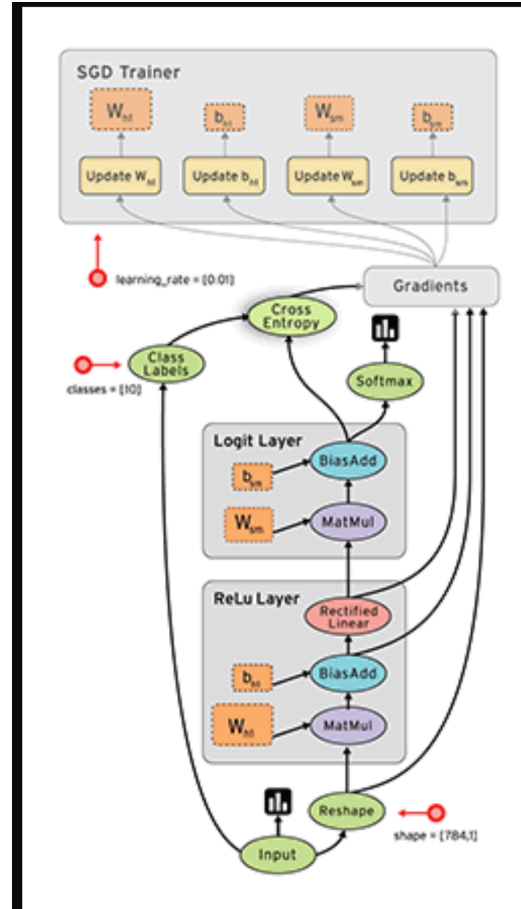
Deep Learning with TensorFlow - Introduction to TensorFlow

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<https://www.youtube.com/watch?v=MotG3XI2qSs>

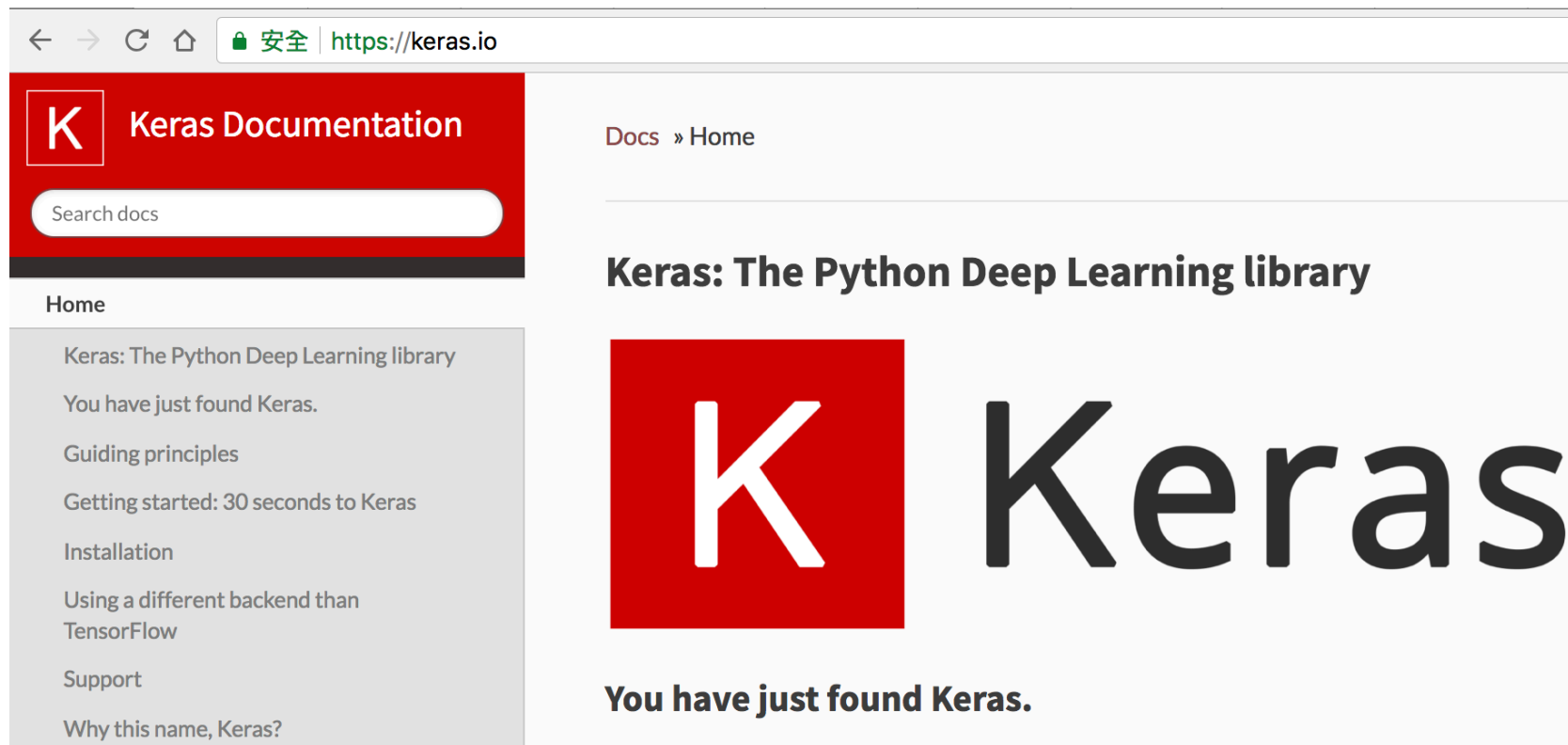
TensorFlow : Computational Graph



https://www.tensorflow.org/images/tensors_flowimg.gif

Keras: The Python Deep Learning library

- ▶ Keras is a high-level neural networks API, written in Python and capable of running on top of [TensorFlow](#), [CNTK](#), or [Theano](#)



The screenshot shows a web browser window with the URL <https://keras.io>. The page features a red header with the Keras logo (a white 'K' in a red square) and the text "Keras Documentation". Below the header is a search bar labeled "Search docs". The main content area has a breadcrumb "Docs » Home" and a heading "Keras: The Python Deep Learning library". Below this is a large red square with a white 'K' and the word "Keras" in a large, bold, black font. At the bottom of the main content area, it says "You have just found Keras." On the left side, there is a sidebar with a "Home" section containing a list of links: "Keras: The Python Deep Learning library", "You have just found Keras.", "Guiding principles", "Getting started: 30 seconds to Keras", "Installation", "Using a different backend than TensorFlow", "Support", and "Why this name, Keras?".

Installing TensorFlow, Keras, and Python in Windows – YouTube (by Jeff Heaton)



Installing TensorFlow, Keras, and Python in Windows

<https://www.youtube.com/watch?v=z0qhKP2liHs>