

2022-05-20

## TensorFlow Documentation: Narratives

- "TensorFlow Sad Story" by Zahar Chikishev
  - Previous experience with Pytorch.
  - Thought it wouldn't be so bad given renowned engineering resources & ML expertise
  - Consensus: poorly maintained, ill-directed, and buggy pieces of code.
- Level. Beginner, "Not an expert"
- Installation
  - Nvidia CUDA & cuDNN libraries versions have to match TF version
  - The matching table is hard to find
  - Dependencies are a constant source of problems
  - Hard to upgrade & downgrade for experiments
  - Some libraries are missing
  - tensorflow-addons python package is reportedly "redundant separation of code into two pieces"
  - tensorflow-gpu is reportedly "retired" but constantly updated
- Eager execution is a hoax
  - eager execution is that it often runs slower than graph mode
  - ResNet50 (eager execution) promised comparable performance to tf.function but was 5x slower
- tf.data.Dataset API is a mess
  - dissapointing, Promised: perfromance improvement, surface level initiative

- must maintain argument types which must be specified explicitly
- not explained well in the documentation and you must spend time finding info
- API Duplication.
  - API documentation doesn't mention low level or high level APIs, some developed by third parties, and some are deprecated.
  - there are 7 2D convolution layer implementation
  - Hard to determine
    - correct one to use
    - what are the differences
    - whether some are compatible between themselves but not with others
- Sloppy development
  - Image Data Generator
  - Complicates development
- Sequence data API
  - not even called.
- GPU memory management in TF is bad
- TF training logs always contain several obscure warning messages
- `model.predict()` function leaks RAM memory

"Tensorflow sad story" by Ygor Serpa.

- User seems like an expert
- Ease of installation
  - Colab is free
  - Anaconda pre packages Tensorflow & dependencies
  - cloud providers pre packages it along with their GPU instances
  - agree with Nvidia's issue in beginner

- The author explained that the "addons package" complaint was a minor inconvenience.
- The reason everything isn't included together because it's easier to have a basic package and add specifics as time goes on
- Eager is a hoax
  - Debugging is naturally a slower process so when having eager mode on will make run time slower

## The Data API

- agree with other author
- runs on a CPU C++ backend
- issue is in incompatibility resulting from:
  - Python is not parallelizable
  - C++ code runs freely over all available CPU
  - running any external Python code

## API Duplication.

- The duplication is necessary to help with updating

## Sloppy Development

- all true & agreeing

## Home for Fiction Blog

- Intermediate level of programming
- Beginner for machine learning
- Implementation is at standard and there's self-direction
- Time consuming to get good results
- This example was image to text with TensorFlow

## TensorFlow documentation - Tutorial

- Tutorials are available on tensorflow.org site providing beginner & experts

- under beginner:

- Beginner quick start
- keras basic
- load data

- under experts

- advance quick start
- customization
- distributed training

- there are tutorial videos and tensorflow has youtube channel

- playlists are used to organize videos

- There appears to be a beginner playlist

- Also an extended version for advanced.

- Generally, many youtubers have videos on tensorflow
  - Many are labelled on specific topics
  - Not many are labelled for advance people
  - Contrarily, many are labelled for beginners
  - Many come on series form
  - Tutorials are comprehensive run downs. ranging from 10 minutes to about 1.5 hrs
  - Most of the sample I viewed, was in python and some are offered in javascript.
  - C++ is an honorable

Mention

- deep learning & keras are frequently used words in search results

Tensor flow documentat; translation

- Tensorflow : documentation on tensorflow.org is available in many common languages but doesn't cater to every language
- The documentation's youtube channel offers ~~tutorial~~ in some languages



- Although there are plenty of non-official channels & videos.

\* Beginner

- Uses more example & elaborate explanation  
- Uses more steps, uses different code fragments.

Experts:

- makes assumptions and uses direct terminology

- has more customization.

Flesch-Kincaid readability test in Python

- all metrics provide a score attribute.  
- individual metrics provide additional properties to increased interpretability  
- US Army use the Grade level for assessing the difficulty of technical manual

- common wealth of pennsylvania uses the grade level for scoring automobile insurance policies to ensure their tests are no higher than 9th grade level

- the grade level to score legal document such as business policies & financial forms

Flesch Reading ease. → score from 0-100

- US dept of defense was the leading test as the standard kit of readability for it documents 3 forms.

- Florida requires that life insurance policies have a Flesch Reading Ease score of 45 or greater

Score	Difficulty
90-100	v easy
80-89	easy
70-79	Fairly easy
60-69	Standard.
50-59	Fairly difficult
30-49	difficult
0-29	very confusing

gives  
→ grade  
letter

Flesch-Kincaid Grade Level

- Returns the FK grade of the given text. This is a grade formula in that a score of 9.3 means that a ninth grader would