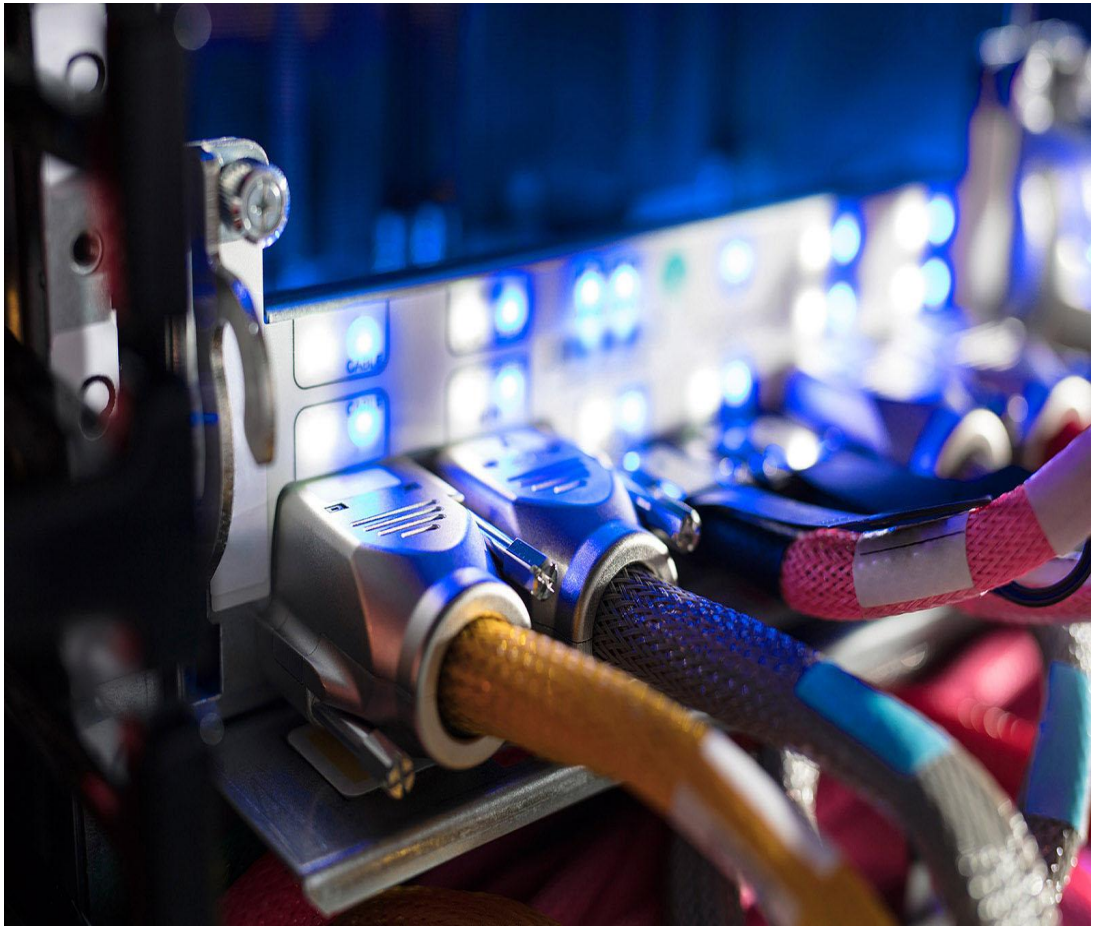
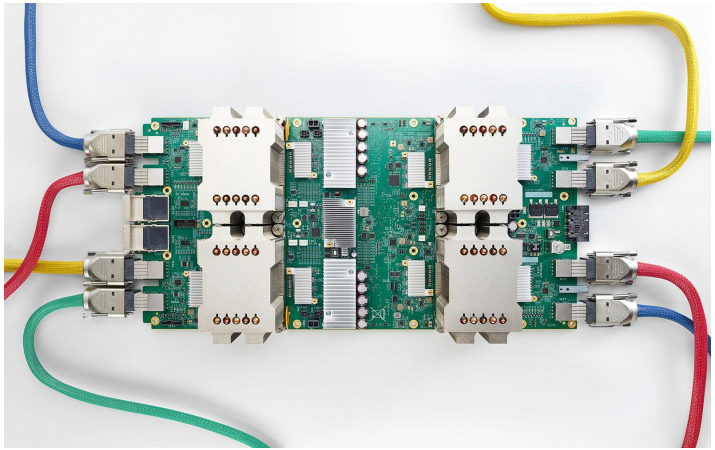
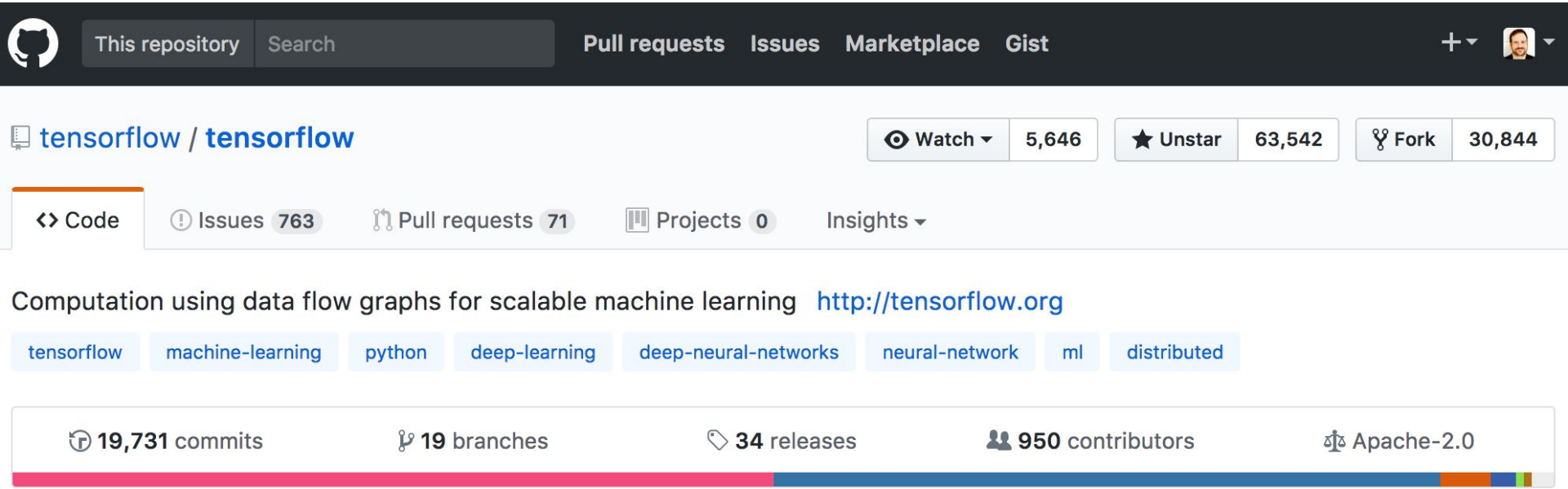
Go bindings for Tensorflow

@ctava1

TensorFlow™ is an open source software library for numerical computation using graphs. Nodes in the graph represent operations, while the edges represent the multidimensional data arrays (tensors) that are communicated between the nodes.

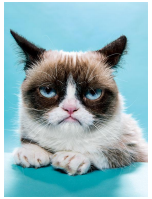





This repository
Search
Pull requests
Issues
Marketplace
Gist
tensorflow / tensorflow
Watch 5,646
Unstar 63,542
Fork 30,844
Code
Issues 763
Pull requests 71
Projects 0
Insights
Computation using data flow graphs for scalable machine learning http://tensorflow.org
tensorflow
machine-learning
python
deep-learning
deep-neural-networks
neural-network
ml
distributed
19,731 commits
19 branches
34 releases
950 contributors
Apache-2.0

TensorFlow provides APIs for use in Go programs. These APIs are designed to load models created in Python and executing them within a Go application

WARNING: The TensorFlow Go API is *not* covered by the TensorFlow API stability guarantees.

July 2017	Updating install_golang.sh - bumping to 1.8.3
Feb - July 2017	 **Go: Update generated wrapper functions for TensorFlow ops.** ··· **tensorflower-gardener** committed with **tensorflower-gardener** 2 days ago ✓
Jan/Feb 2017	Tweaks to code gen 
Oct-Dec 2016	Scope support, performance tuning, protoc-gen-go fixes
Sep 2016	go: Add an example. go: Ability to import a pre-defined Graph. 
Aug 2016	Initial version of the Go API
Nov 2015	TensorFlow: Initial commit of TensorFlow library.

Current state - July 2017

Go bindings for TensorFlow could be more user-friendly

Perceptions: not usable. falling behind python

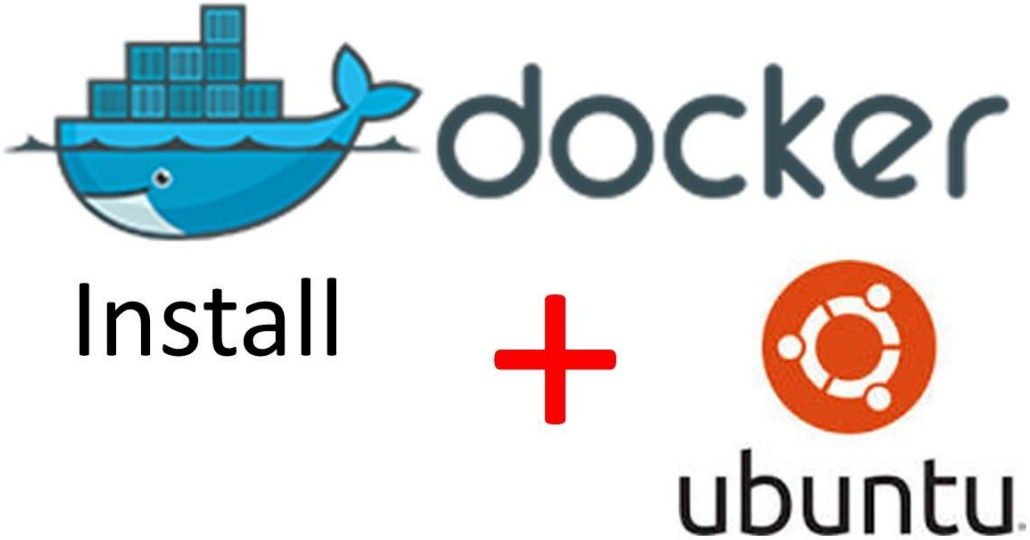
Depending on your use case, these differences may not matter. But as of March 2017, for any production use, it's still probably better to build the model in Python.

“The C API that wraps the c++ framework leans towards simplicity and uniformity instead of convenience”

“More and more of that functionality is being moved into the core of TensorFlow (implemented in C++) and exposed via a C API.”

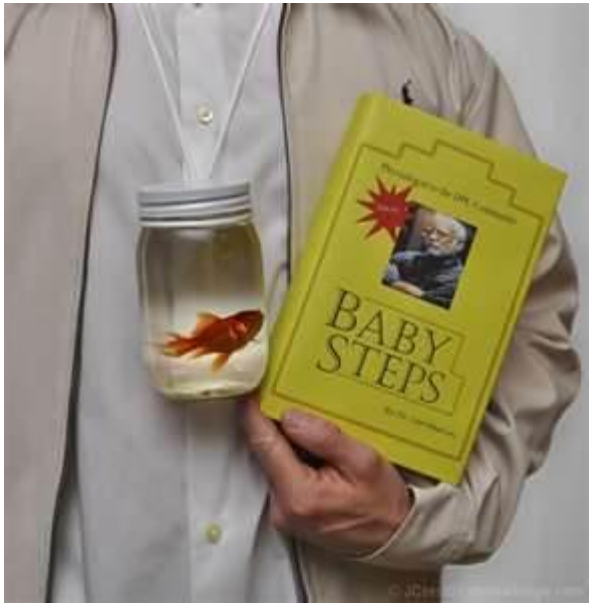
If you'd like to create an op that isn't covered by the existing TensorFlow library, we recommend that you first try writing the op in Python as a composition of existing Python ops or functions. If that isn't possible, you can create a custom C++ op.

ubuntu:16.04
apt-get git, curl etc
bazel build
golang 1.8.3
tf 1.2.1
protoc 3.3.0
tfcgo
gonum/plot
gonum/floats
delve



docker pull ctava/tfcgo:4.0

go run versioncheck.go
go run saysomething.go
go run listops.go



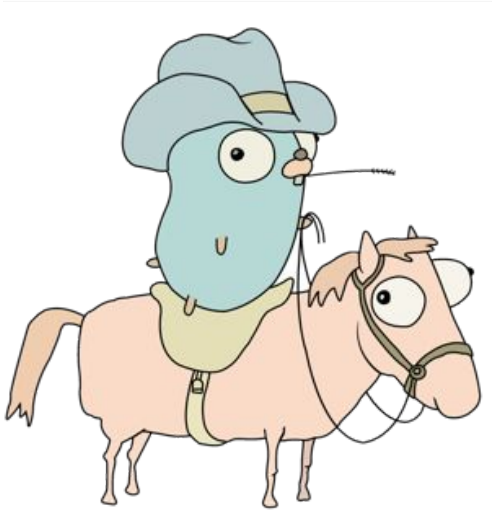
build the graph (const, variables, operations)

initialize variables

write graph out as text

run (feeds, fetches, operations)

print out variables



DELVE

A Debugger for the Go Programming Language

How should the tensorflow go bindings grow?

Python - Training
C
C++
Go
Java
Julia
Rust
Haskell

Actions:

Submit PR for graphio.go
Evaluate building 1st class support for Variables/training

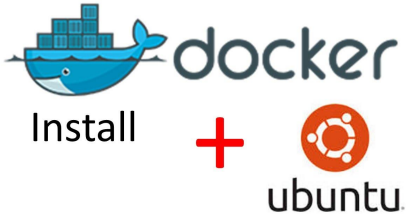
Happy to consider your requirements
Would like to see libraries like gonum integrated more deeply into tensorflow
Pairing up with me is very much welcomed

Recap

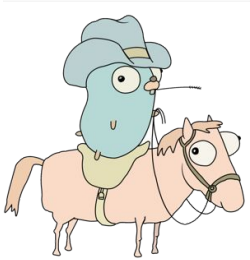
tensorflow / tensorflow

Watch 5,656 | Unstar 63,626 | Fork 30,916

Code | Issues 765 | Pull requests 70 | Projects 0 | Insights



Install + ubuntu



DELVE

A Debugger for the Go Programming Language

Thank you
@ctava1

Talk will be posted on:
http://gopherdata.io/

MOUNTAIN BIKING

EXPLORE COLORADO'S ROCKY MOUNTAINS

SELECT YOUR ADVENTURE NOW!

Backup slides

Models

- adversarial_crypto
- adversarial_text
- attention_ocr
- autoencoder
- cognitive_mapping_and_planning
- compression
- differential_privacy
- domain_adaptation
- im2txt
- inception
- learning_to_remember_rare_events
- lfads
- lm_1b
- namignizer
- neural_gpu
- neural_programmer
- next_frame_prediction
- object_detection
- pcl_rl
- real_nvp
- resnet
- resnet
- skip_thoughts
- slim
- street
- swivel
- syntaxnet
- textsum
- transformer
- tutorials
- video_prediction