

VB-TREND 2018

Мастер-класс Splunk Machine Learning Toolkit

MLTK Container for TensorFlow™

Philipp Drieger | Staff Machine Learning Architect

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PHILIPP DRIEGER

Staff Machine Learning Architect
philipp@splunk.com



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```

130.60.4 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&JSESSIONID=5D15L4FF10ADFF10 HTTP/1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FL-SW-03"
128.241.220.82 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&JSESSIONID=5D55L7FF6ADFF0 HTTP/1.1" 404 3322 "http://buttercup-shopping.com/category.screen?category_id=GIFTS"
1317.27.160.0.0 - - [07/Jan 18:10:57:156] "GET /oldlink?item_id=EST-26&JSESSIONID=5D55L9FF1ADFF3 HTTP/1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=FL-SW-03"
ows NT 5.1: SVL: - - [07/Jan 18:10:56:156] "GET /category.screen?category_id=FLOWERS&JSESSIONID=5D16L8FF2ADFF0 HTTP/1.1" 200 1120 "http://buttercup-shopping.com/category.screen?category_id=FLOWERS"
://buttercup-shopping.com/... "GET /category.screen?category_id=FLOWERS&JSESSIONID=5D16L8FF2ADFF0 HTTP/1.1" 200 1120 "http://buttercup-shopping.com/category.screen?category_id=FLOWERS"
action=purchase&itemId=EST-16&product_id=RP-LI-02" 468 125.17 14 ... "GET /category.screen?category_id=FLOWERS&JSESSIONID=5D16L8FF2ADFF0 HTTP/1.1" 200 1120 "http://buttercup-shopping.com/category.screen?category_id=FLOWERS"
http://buttercup-shopping.com/cart.do?action=remove&itemId=EST-14&JSESSIONID=5D16L8FF2ADFF0 HTTP/1.1" 200 1120 "http://buttercup-shopping.com/cart.do?action=remove&itemId=EST-14&JSESSIONID=5D16L8FF2ADFF0 HTTP/1.1"

```

AI | ML | Deep Learning

Let's start with AI

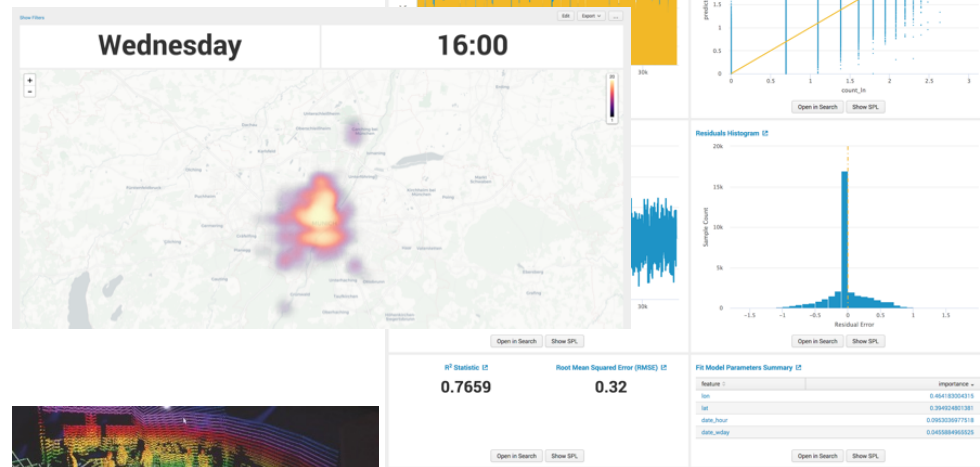
Artificial Intelligence

- ▶ **Artificial Intelligence (AI)**
The self driving car



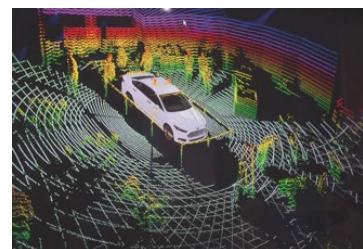
Machine Learning

- ▶ **Machine Learning (ML)**
Predicting car demand based on past history
- ▶ Example given by BMW

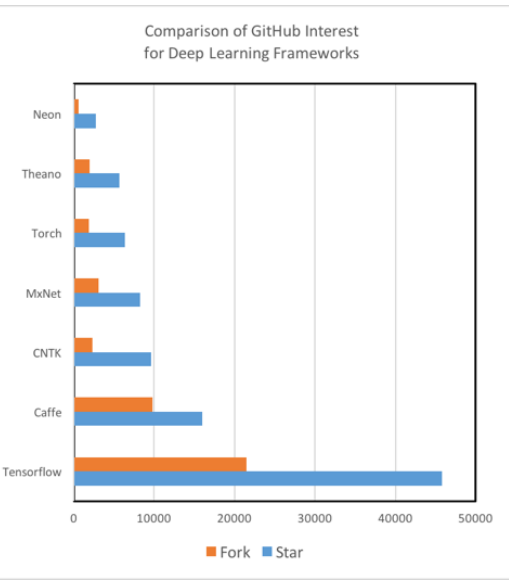
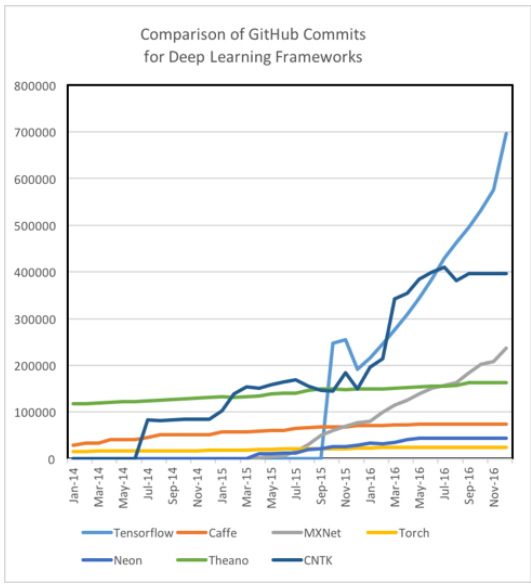


Deep Learning

- ▶ **Deep Learning (DL)**
~~Not in our product today...~~ **but we still do NO image processing**

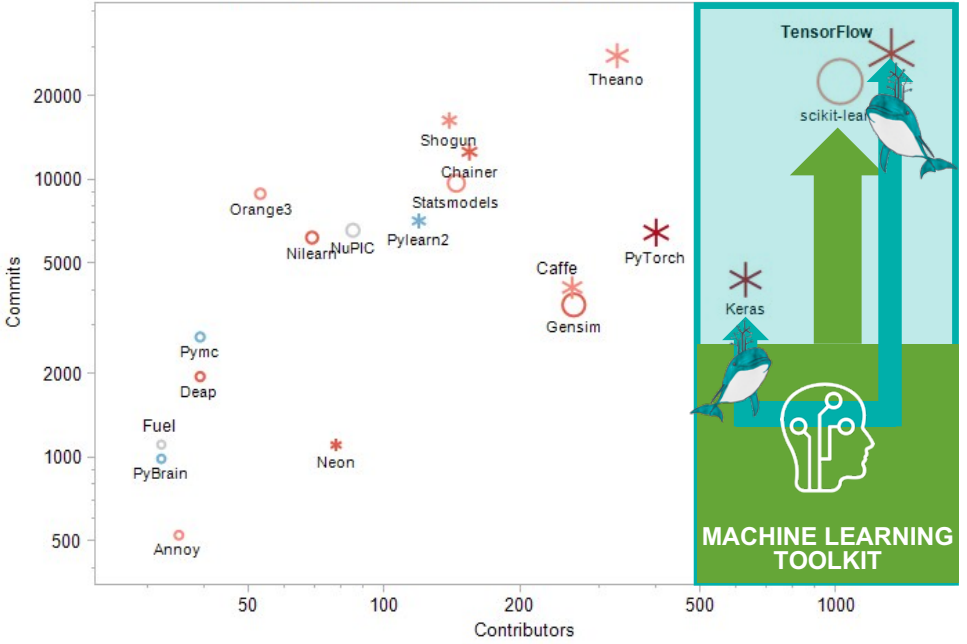


Popular ML/DL Frameworks in the Python Landscape



<https://www.kdnuggets.com/2017/03/getting-started-deep-learning.html>

Top 20 Python AI and Machine Learning projects on Github



<https://www.kdnuggets.com/2018/02/top-20-python-ai-machine-learning-open-source-projects.html>

```

138.60.4 - - [07/Jun 18:10:57:153] "GET /category.screen?category_id=GIFTS&SESSIONID=5D15L4FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03"
128.241.220.82 - - [07/Jun 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/category.screen?category_id=GLIFS"
172.17.169.0 - - [07/Jun 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-2&product_id=08-CB-01"
172.17.169.0 - - [07/Jun 18:10:56:156] "GET /oldlink?item_id=EST-6&SESSIONID=5D16L8FF2ADFF0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/category.screen?category_id=GLIFS"
172.17.169.0 - - [07/Jun 18:10:56:156] "GET /oldlink?item_id=EST-6&SESSIONID=5D16L8FF2ADFF0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/category.screen?category_id=GLIFS"
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172.17.169.0 - - [07/Jun 18:10:56:156] "GET /oldlink?item_id=EST-6&SESSIONID=5D16L8FF2ADFF0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/category.screen?category_id=GLIFS"
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```

MLTK Container for TensorFlow™

MLTK Container for TensorFlow™ – Why?

Because our customers ask. We listen. Simple as that!



Popular deep learning frameworks help to extend MLTK for specific use cases.



Freedom for Data Scientists and Developers to bring in custom code and models

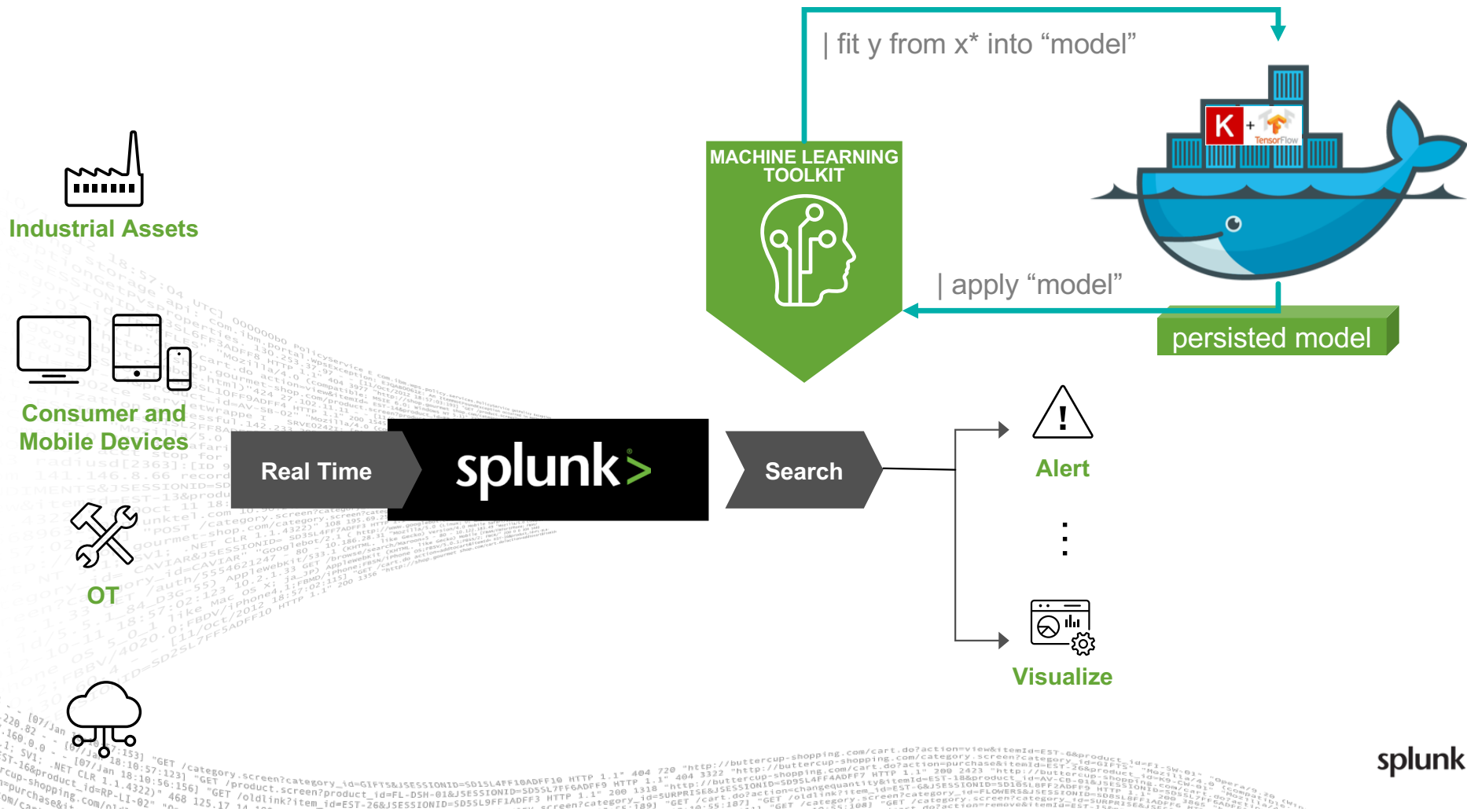


Flexibility to run compute intense model trainings on GPU accelerated hardware

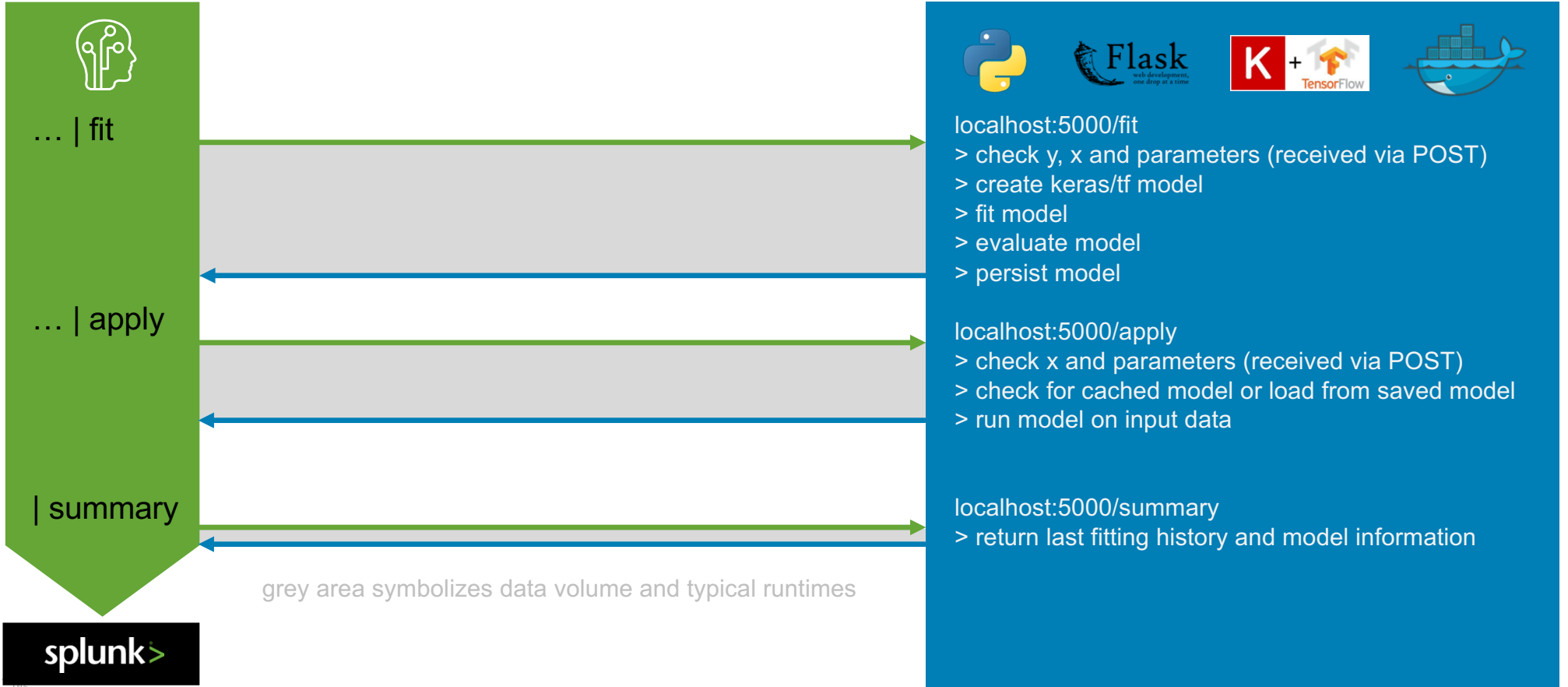
```
138.60.4 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&JSESSIONID=5D55L4FF10ADFF10 HTTP/1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03"
128.241.220.82 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&JSESSIONID=5D55L7FF6ADFF3 HTTP/1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=NOZ-11-2"
1317.27.160.0 - - [07/Jan 18:10:56:156] "GET /oldlink?item_id=EST-26&JSESSIONID=5D55L9FF1ADFF3 HTTP/1.1" 200 1318 "http://buttercup-shopping.com/category.screen?category_id=FLOWERS&JSESSIONID=5D55L9FF1ADFF3"
ows NT 5.1: SV1: - .NET CLR 1.1.4322) 468 125.17 14 ...
//buttercup-shopping.com/nt...
action=purchase&...
pping.com/ca...
//butter...
```


Architecture Overview

Splunk > MLTK > Dockerized Deep Learning



Process and interaction flow



splunk>

```

138.60.4 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=61f5&jsessionid=5d1514ff10adff10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=f3-5w-03"
128.241.220.82 - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&jsessionid=5d5517ff6adff0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-20&product_id=61f5"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /product.screen?product_id=FL-DSH-01&jsessionid=5d5517ff6adff0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-20&product_id=61f5"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /oldlink?item_id=EST-26&jsessionid=5d5517ff6adff0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=changequantity&itemId=EST-18&product_id=AV-CL-01&jsessionid=5d1618ff2adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /oldlink?item_id=EST-26&jsessionid=5d5517ff6adff0 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=changequantity&itemId=EST-18&product_id=AV-CL-01&jsessionid=5d1618ff2adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /cart.do?jsessionid=5d5517ff6adff0 HTTP 1.1" 200 1257 "http://buttercup-shopping.com/cart.do?jsessionid=5d5517ff6adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /category.screen?category_id=5d819ff1adff0 HTTP 1.1" 200 1257 "http://buttercup-shopping.com/cart.do?jsessionid=5d5517ff6adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /category.screen?category_id=5d819ff1adff0 HTTP 1.1" 200 1257 "http://buttercup-shopping.com/cart.do?jsessionid=5d5517ff6adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /category.screen?category_id=5d819ff1adff0 HTTP 1.1" 200 1257 "http://buttercup-shopping.com/cart.do?jsessionid=5d5517ff6adff0"
107.169.0.0 - [07/Jan 18:10:56:156] "GET /category.screen?category_id=5d819ff1adff0 HTTP 1.1" 200 1257 "http://buttercup-shopping.com/cart.do?jsessionid=5d5517ff6adff0"
  
```

splunk> .conf18

Splunk App for the MLTK Container

MLTK Container for TensorFlow™

Edit Export ...

- Overview
- Classifier
- Regressor**

Overview



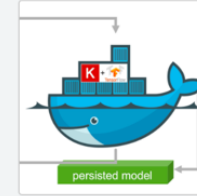
Setup Instructions

Learn about how to setup the MLTK Container step by step



Container Management

Controls to start and stop the MLTK Container and check its status



MLTK Container Overview

Description of the architecture

Classifier

| serum_insulin | skin_thickness | | | | | | | |
|---------------|----------------|---|---|---|---|---|----|------|
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 110 | 32 | | | | | | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | next |

| Predicted 0 | Predicted 1 |
|-------------|-------------|
| 79 (77.5%) | 23 (22.5%) |
| 11 (20.8%) | 42 (79.2%) |

Neural Network Classifier Example

This example shows how to use a binary neural network classifier build on keras and TensorFlow™

| serum_insulin | skin_thickness | | | | | | | |
|---------------|----------------|---|---|---|---|---|----|------|
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 110 | 32 | | | | | | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | next |

| Predicted 0 | Predicted 1 |
|-------------|-------------|
| 79 (77.5%) | 23 (22.5%) |
| 11 (20.8%) | 42 (79.2%) |

Linear Classifier Example

This example shows a linear classifier using the TensorFlow™ estimator class

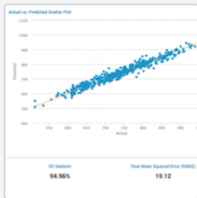
| serum_insulin | skin_thickness | | | | | | | |
|---------------|----------------|---|---|---|---|---|----|------|
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 0 | 0 | | | | | | | |
| 110 | 32 | | | | | | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | next |

| Predicted 0 | Predicted 1 |
|-------------|-------------|
| 79 (77.5%) | 23 (22.5%) |
| 11 (20.8%) | 42 (79.2%) |

LSTM Example

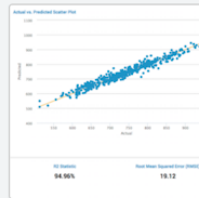
This example shows the results of a LSTM to classify DGA domains

Regressor



Linear Regressor Example

This example shows the results of a simple linear regression using the TensorFlow™ estimator class



Random Forest Regressor Example

This example shows the results of a Random Forest Regressor using TensorFlow™

Container Management

Edit Export ...

Container Name Container endpoint [Hide Filters](#)

Container Controls

* logging currently only works for mac osx

Containers Running (update delay 5s)



Information

This dashboard provides simple container controls to start and stop a container and retrieve status information



Container Status (update delay 5s)

| action |
|---|
| 1 07545ddbfff1 mltk-container-tensorflow "./bootstrap.sh" 18 seconds ago Up 17 seconds 0.0.0.0:5000->5000/tcp mltk-container-tensorflow |

Container Logs (update delay 5s)

| _time | line |
|-------------------------|---|
| 2018-09-04 12:27:27.506 | WARNING: Do not use the development server in a production environment. |
| 2018-09-04 12:27:27.506 | * Environment: production |
| 2018-09-04 12:27:27.506 | * Serving Flask app "/srv/container/index.py" |
| 2018-09-04 12:27:27.170 | Docker bootstrap entry point set to index.py |
| 2018-09-04 12:26:40.650 | 172.17.0.1 - - [04/Sep/2018 10:26:40] "POST /fit HTTP/1.1" 200 - |

< prev 1 2 3 4 5 6 7 8 9 10 next >

MLTK Logs

| _time | _raw |
|-------------------------|---|
| 2018-09-04 12:26:40.630 | 1536056800.630000 PID 90477 2018-09-04 12:26:40,630 DEBUG [mlspl.MLTKClassifier] [endpoint] POST endpoint [http://localhost:5000/fit] returned with payload (16484 bytes) with status 200 |
| 2018-09-04 12:25:43.343 | 1536056743.343556 PID 90477 2018-09-04 12:25:43,343 DEBUG [mlspl.MLTKClassifier] [endpoint] POST endpoint [http://localhost:5000/fit] called with payload (44042 bytes) |

MLTK Container Classifier Example

Edit Export ...

Model Name X Container endpoint [Hide Filters](#)

This example shows the interaction with Splunk> Machine Learning Toolkit and a custom container that runs a (multi layer fully connected) neural network classifier. Make sure to check the [setup page](#) and perform all steps needed to run this dashboard successfully.

| response | response_prediction | response_prediction_raw | BMI | age | blood_pressure | diabetes_pedigree | glucose_concentration | number_pregnant | serum_insulin | skin_thickness |
|----------|---------------------|-------------------------|------|-----|----------------|-------------------|-----------------------|-----------------|---------------|----------------|
| 1 | 1 | 0.9126277566 | 33.6 | 50 | 72 | 0.627 | 148 | 6 | 0 | 35 |
| 0 | 0 | 0.0446447767 | 26.6 | 31 | 66 | 0.351 | 85 | 1 | 0 | 29 |
| 1 | 0 | 0.4475494921 | 23.3 | 32 | 64 | 0.672 | 183 | 8 | 0 | 0 |
| 0 | 0 | 0.0420317426 | 28.1 | 21 | 66 | 0.167 | 89 | 1 | 94 | 23 |
| 1 | 1 | 0.5078072548 | 43.1 | 33 | 40 | 2.288 | 137 | 0 | 168 | 35 |

< prev 1 2 3 4 5 6 7 8 9 10 next >

confusion matrix

| | Predicted actual | Predicted 0 | Predicted 1 |
|---|------------------|-------------|-------------|
| 0 | | 468 | 32 |
| 1 | | 143 | 125 |

Classification statistics

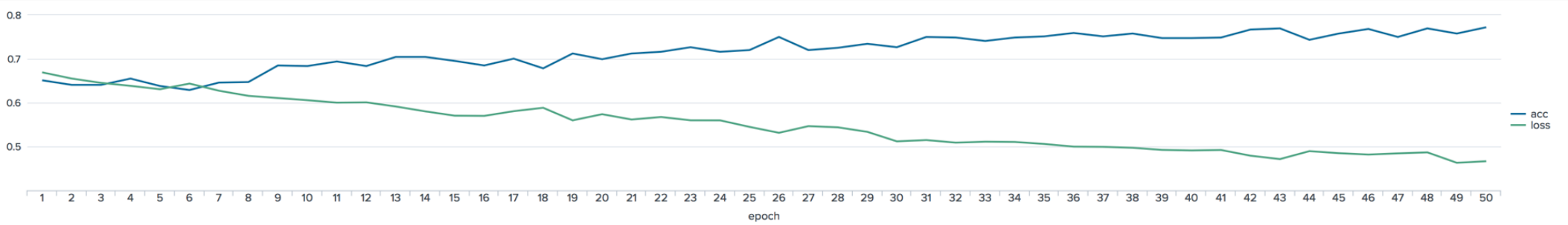
| accuracy | precision | recall | f1 |
|-------------|-------------|-------------|-------------|
| 0.77 | 0.78 | 0.77 | 0.77 |

Information about existing model (click to inspect the model) ⚠

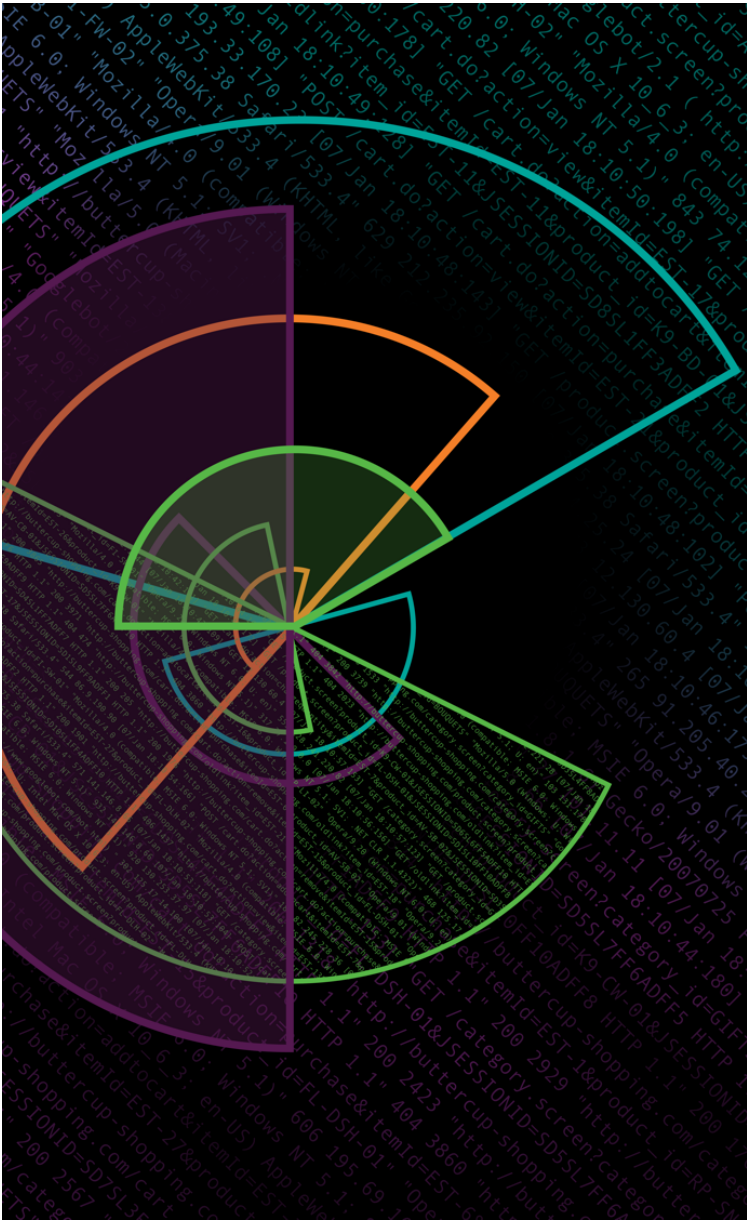
| app | name | owner | sharing | type |
|------------------------------|---------------|-------|---------|----------------|
| SA-MLTK-Container-Tensorflow | diabetes_test | admin | user | MLTKClassifier |

Model summary for diabetes_test

| acc | batch_size | epochs | input_shape | loss | model_name | summary |
|----------------|------------|--------|---------------------|----------------|---------------|---------------|
| 0.772135416667 | None | 50 | X(768, 8) Y(768, 1) | 0.455660077433 | diabetes_test | diabetes_test |

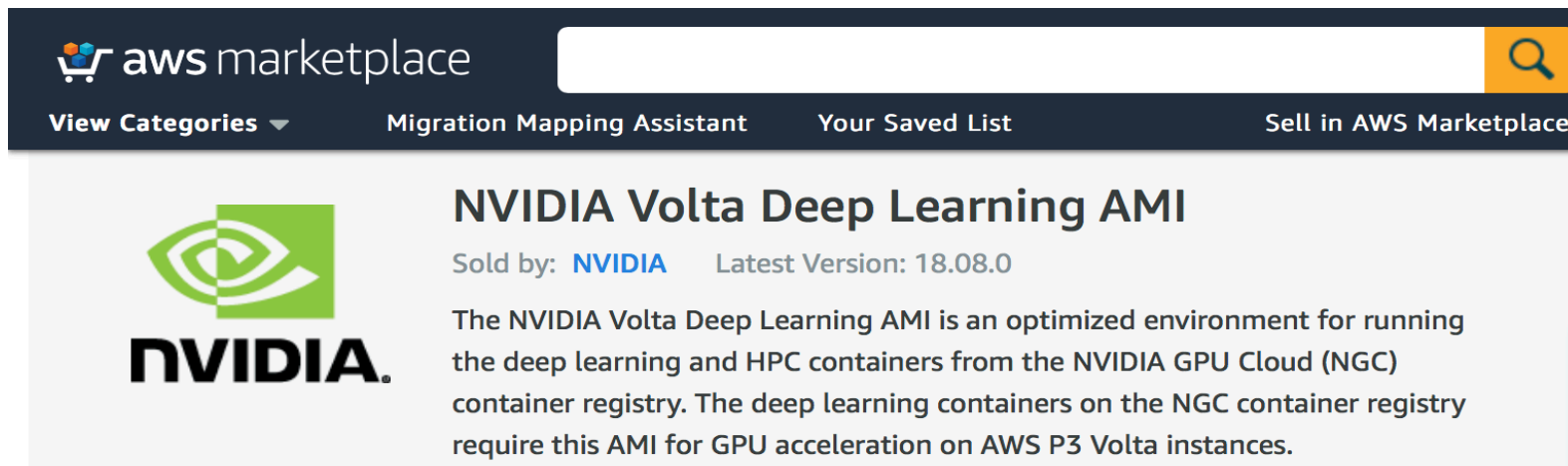


CPU vs GPU Benchmark




CPU vs GPU – Benchmark

- ▶ AWS Instance: p3.2xlarge (64GB, 8vCPU, NVIDIA V100 GPU 16GB)
- ▶ DGA Dataset: 100K events with 100 dimensions + 1 target dimension
- ▶ Neural Network: 10 layer deep neural network with 886K trainable parameters, 100 layer deep with 9M trainable parameters



aws marketplace

View Categories ▾ Migration Mapping Assistant Your Saved List Sell in AWS Marketplace

 **NVIDIA**

NVIDIA Volta Deep Learning AMI

Sold by: [NVIDIA](#) Latest Version: 18.08.0

The NVIDIA Volta Deep Learning AMI is an optimized environment for running the deep learning and HPC containers from the NVIDIA GPU Cloud (NGC) container registry. The deep learning containers on the NGC container registry require this AMI for GPU acceleration on AWS P3 Volta instances.

CPU vs GPU > 15x speedup on search runtime

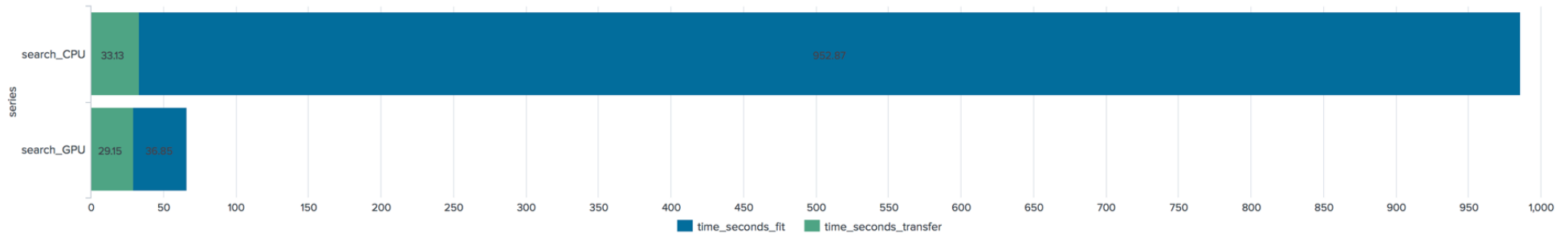
100K dataset | 100 dimensions | 10 layer NN

CPU: 986 seconds (00:16:26)

Search job Inspector: This search has completed and has returned 100,000 results by scanning 0 events in 986.562 seconds

GPU: 66 seconds (00:00:66)

Search job Inspector: This search has completed and has returned 100,000 results by scanning 0 events in 66.765 seconds



130.60.4 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

128.241.226 - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FFGADFF0 HTTP 1.1" 404 322 "http://buttermcup-shopping.com/cart.do?action=changequantity&itemId=EST-18&product_id=AV-CB-01&SESSIONID=5D55L8FF2ADF0 HTTP 1.1" 200 242 "http://buttermcup-shopping.com/cart.do?action=remove&itemId=EST-1&product_id=RP-LI-02" 468 125.17 14

137.27.169.0 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

137.27.169.0 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

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137.27.169.0 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

137.27.169.0 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

137.27.169.0 - [07/Jan 18:10:57:153] "GET /category.screen?category_id=6175&SESSIONID=5D55L4FF10ADF10 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV: ; .NET CLR 3.1.4322)" 468 125.17 14

CPU vs GPU > 25x speedup on model fitting

100K dataset | 100 dimensions | 10 layer NN

The screenshot shows the Splunk Enterprise interface with a search for 'Benchmark CPU vs GPU : 25x speedup'. The search results are displayed in a table with the following columns: 'column', 'dga_tfidf_CPU_128ep_16384batch', and 'dga_tfidf_GPU_128ep_16384batch'. The 'time_fit_duration' row shows a CPU time of 0:15:52.876940 and a GPU time of 0:00:36.857751.

```
| summary dga_tfidf_CPU_128ep_16384batch  
| append  
  [| summary dga_tfidf_GPU_128ep_16384batch]  
| fields model_name time_fit_duration  
| transpose header_field=model_name
```

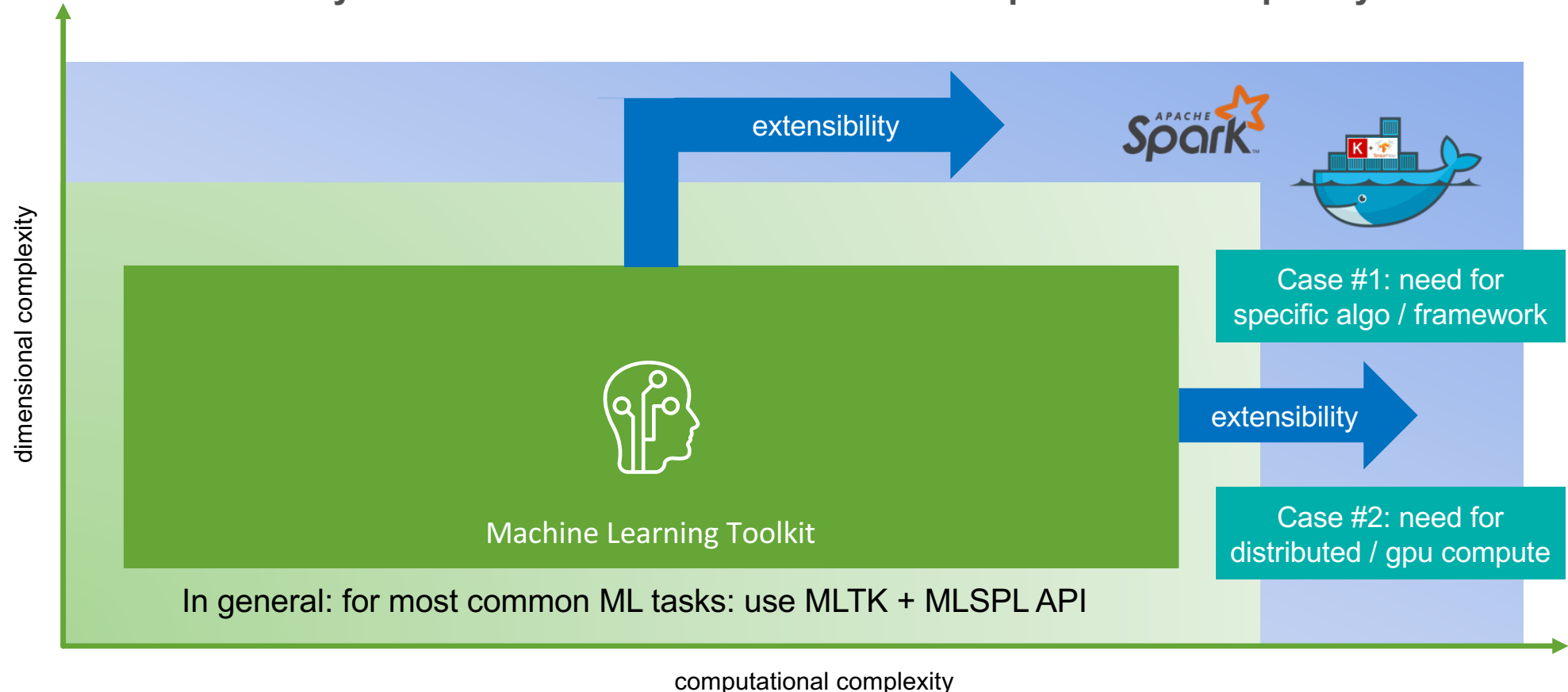
| column | dga_tfidf_CPU_128ep_16384batch | dga_tfidf_GPU_128ep_16384batch |
|-------------------|--------------------------------|--------------------------------|
| time_fit_duration | 0:15:52.876940 | 0:00:36.857751 |

130.60.4 - [07/Jan 18:10:57:123] "GET /category.screen?category_id=6175&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 404 720 "http://buttermcup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FL-SW-03"
128.241.220.82 - [07/Jan 18:10:57:123] "GET /category.screen?category_id=6175&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 404 3322 "http://buttermcup-shopping.com/cart.do?action=category.screen?category_id=6175"
1317 27.169.0.0 - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 200 1318 "http://buttermcup-shopping.com/cart.do?action=changequantity&itemId=EST-18&product_id=AV-CD-61&SESSIONID=5D55L9FF1ADFF3"
1317 27.169.0.0 - [07/Jan 18:10:56:156] "GET /oldlink?item_id=EST-6&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 200 517 "http://buttermcup-shopping.com/cart.do?action=purchase&itemId=EST-16&product_id=RP-LI-02"
1317 27.169.0.0 - [07/Jan 18:10:56:156] "GET /oldlink?item_id=EST-26&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 468 125.17 "http://buttermcup-shopping.com/cart.do?action=remove&itemId=EST-14&SESSIONID=5D55L9FF1ADFF3"
1317 27.169.0.0 - [07/Jan 18:10:56:156] "GET /category.screen?category_id=6175&SESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 404 3322 "http://buttermcup-shopping.com/cart.do?action=category.screen?category_id=6175"

Wrap up

Recommendation Matrix

consider your ML dataset's dimensional and computational complexity



```

130.60.4 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&SESSIONID=5D55L4FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03"
128.241.220.82 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/category.screen?category_id=6&product_id=FL-DSH-01"
1317.27.160.0 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&SESSIONID=5D55L4FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03"
ows NT 5.1: SVL: - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&SESSIONID=5D55L4FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03"
: //buttercup-shopping.com/nt...
to?action=purchase&...
opping.com/ca...
//butter...

```

Key Take Aways

What are the benefits of MLTK Container for TensorFlow™



Prebuilt container examples in the MLTK Container for TensorFlow™ App



Customize containerized code for specific use cases using ML/DL frameworks of choice



Flexibility to run compute intense model trainings on GPU accelerated hardware

```
138.60.4 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&SESSIONID=5D15L4FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=F3-SW-03" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
128.241.220.82 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...  
137.27.160.0 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=9C-CW-01" "Mozilla/5.0 (Windows NT 5.1; SV1; .NET CLR 1.1.4322) 468 125.17 14 ...
```

“Available as Splunk Professional Services (Whiteglove Program) that you can engage as of today – let us know!”

MLTK Container for TensorFlow™

Thanks | Q&A

philipp@splunk.com