

Package ‘tfdeploy’

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Type Package

Title Deploy 'TensorFlow' Models

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Description Tools to deploy 'TensorFlow' <<https://www.tensorflow.org/>> models across multiple services. Currently, it provides a local server for testing 'cloudml' compatible services.

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Encoding UTF-8

LazyData true

Imports httpuv, httr, jsonlite, magrittr, reticulate, swagger,
tensorflow

Suggests cloudml, knitr, pixels, processx, testthat, yaml, stringr

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load_savedmodel	<i>Load a SavedModel</i>
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Description

Loads a SavedModel using the given TensorFlow session and returns the model's graph.

Usage

```
load_savedmodel(sess = NULL, model_dir = NULL)
```

Arguments

sess	The TensorFlow session. NULL if using Eager execution.
model_dir	The path to the exported model, as a string. Defaults to a "savedmodel" path or the latest training run.

Details

Loading a model improves performance over multiple `predict_savedmodel()` calls.

See Also

[export_savedmodel\(\)](#), [predict_savedmodel\(\)](#)

Examples

```
## Not run:
# start session
sess <- tensorflow::tf$Session()

# preload an existing model into a TensorFlow session
graph <- tfdeploy::load_savedmodel(
  sess,
  system.file("models/tensorflow-mnist", package = "tfdeploy")
)

# perform prediction based on a pre-loaded model
tfdeploy::predict_savedmodel(
  list(rep(9, 784)),
  graph
)

# close session
sess$close()

## End(Not run)
```

predict_savedmodel *Predict using a SavedModel*

Description

Runs a prediction over a saved model file, web API or graph object.

Usage

```
predict_savedmodel(instances, model, ...)
```

Arguments

instances	A list of prediction instances to be passed as input tensors to the service. Even for single predictions, a list with one entry is expected.
model	The model as a local path, a REST url or graph object. A local path can be exported using <code>export_savedmodel()</code> , a REST URL can be created using <code>serve_savedmodel()</code> and a graph object loaded using <code>load_savedmodel()</code> . A type parameter can be specified to explicitly choose the type model performing the prediction. Valid values are <code>export</code> , <code>webapi</code> and <code>graph</code> .
...	See predict_savedmodel.export_prediction() , predict_savedmodel.graph_prediction() , predict_savedmodel.webapi_prediction() for additional options. #’ @section Implementations: <ul style="list-style-type: none">• predict_savedmodel.export_prediction()• predict_savedmodel.graph_prediction()• predict_savedmodel.webapi_prediction()

See Also

[export_savedmodel\(\)](#), [serve_savedmodel\(\)](#), [load_savedmodel\(\)](#)

Examples

```
## Not run:  
# perform prediction based on an existing model  
tfdeploy::predict_savedmodel(  
  list(rep(9, 784)),  
  system.file("models/tensorflow-mnist", package = "tfdeploy")  
)  
  
## End(Not run)
```

predict_savedmodel.export_prediction

Predict using an Exported SavedModel

Description

Performs a prediction using a locally exported SavedModel.

Usage

```
## S3 method for class 'export_prediction'
predict_savedmodel(instances, model,
  signature_name = "serving_default", ...)
```

Arguments

instances	A list of prediction instances to be passed as input tensors to the service. Even for single predictions, a list with one entry is expected.
model	The model as a local path, a REST url or graph object. A local path can be exported using <code>export_savedmodel()</code> , a REST URL can be created using <code>serve_savedmodel()</code> and a graph object loaded using <code>load_savedmodel()</code> . A type parameter can be specified to explicitly choose the type model performing the prediction. Valid values are <code>export</code> , <code>webapi</code> and <code>graph</code> .
signature_name	The named entry point to use in the model for prediction.
...	See predict_savedmodel.export_prediction() , predict_savedmodel.graph_prediction() , predict_savedmodel.webapi_prediction() for additional options. #’ @section Implementations: <ul style="list-style-type: none"> • predict_savedmodel.export_prediction() • predict_savedmodel.graph_prediction() • predict_savedmodel.webapi_prediction()

predict_savedmodel.graph_prediction

Predict using a Loaded SavedModel

Description

Performs a prediction using a SavedModel model already loaded using `load_savedmodel()`.

Usage

```
## S3 method for class 'graph_prediction'
predict_savedmodel(instances, model, sess,
  signature_name = "serving_default", ...)
```

Arguments

instances	A list of prediction instances to be passed as input tensors to the service. Even for single predictions, a list with one entry is expected.
model	The model as a local path, a REST url or graph object. A local path can be exported using <code>export_savedmodel()</code> , a REST URL can be created using <code>serve_savedmodel()</code> and a graph object loaded using <code>load_savedmodel()</code> . A type parameter can be specified to explicitly choose the type model performing the prediction. Valid values are <code>export</code> , <code>webapi</code> and <code>graph</code> .
sess	The active TensorFlow session.
signature_name	The named entry point to use in the model for prediction.
...	See predict_savedmodel.export_prediction() , predict_savedmodel.graph_prediction() , predict_savedmodel.webapi_prediction() for additional options. #’ @section Implementations: <ul style="list-style-type: none"> • predict_savedmodel.export_prediction() • predict_savedmodel.graph_prediction() • predict_savedmodel.webapi_prediction()

```
predict_savedmodel.webapi_prediction
    Predict using a Web API
```

Description

Performs a prediction using a Web API providing a SavedModel.

Usage

```
## S3 method for class 'webapi_prediction'
predict_savedmodel(instances, model, ...)
```

Arguments

instances	A list of prediction instances to be passed as input tensors to the service. Even for single predictions, a list with one entry is expected.
model	The model as a local path, a REST url or graph object. A local path can be exported using <code>export_savedmodel()</code> , a REST URL can be created using <code>serve_savedmodel()</code> and a graph object loaded using <code>load_savedmodel()</code> . A type parameter can be specified to explicitly choose the type model performing the prediction. Valid values are <code>export</code> , <code>webapi</code> and <code>graph</code> .
...	See predict_savedmodel.export_prediction() , predict_savedmodel.graph_prediction() , predict_savedmodel.webapi_prediction() for additional options. #’ @section Implementations: <ul style="list-style-type: none"> • predict_savedmodel.export_prediction() • predict_savedmodel.graph_prediction() • predict_savedmodel.webapi_prediction()

serve_savedmodel *Serve a SavedModel*

Description

Serve a TensorFlow SavedModel as a local web api.

Usage

```
serve_savedmodel(model_dir, host = "127.0.0.1", port = 8089,  
  daemonized = FALSE, browse = !daemonized)
```

Arguments

model_dir	The path to the exported model, as a string.
host	Address to use to serve model, as a string.
port	Port to use to serve model, as numeric.
daemonized	Makes 'httpuv' server daemonized so R interactive sessions are not blocked to handle requests. To terminate a daemonized server, call 'httpuv::stopDaemonizedServer()' with the handle returned from this call.
browse	Launch browser with serving landing page?

See Also

[export_savedmodel\(\)](#)

Examples

```
## Not run:  
# serve an existing model over a web interface  
tfdeploy::serve_savedmodel(  
  system.file("models/tensorflow-mnist", package = "tfdeploy")  
)  
  
## End(Not run)
```

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