Wrappers for the Scikit-Learn API

You can use `Sequential` Keras models (single-input only) as part of your Scikit-Learn workflow via the wrappers found at `keras.wrappers.sklearn.py`.

There are two wrappers available:

`keras.wrappers.sklearn.KerasClassifier(build_fn=None, **sk_params)`, which implements the sklearn classifier interface,

`keras.wrappers.sklearn.KerasRegressor(build_fn=None, **sk_params)`, which implements the sklearn regressor interface.

Arguments

- **build_fn**: callable function or class instance
- **sk_params**: model parameters & fitting parameters

`build_fn` should construct, compile and return a Keras model, which will then be used to fit/predict. One of the following three values could be passed to build_fn:

1. A function
2. An instance of a class that implements the **call** method
3. None. This means you implement a class that inherits from either `KerasClassifier` or `KerasRegressor`. The **call** method of the present class will then be treated as the default build_fn.

`sk_params` takes both model parameters and fitting parameters. Legal model parameters are the arguments of `build_fn`. Note that like all other estimators in scikit-learn, 'build_fn' should provide default values for its arguments, so that you could create the estimator without passing any values to `sk_params`.

`sk_params` could also accept parameters for calling `fit`, `predict`, `predict_proba`, and `score` methods (e.g., `nb_epoch`, `batch_size`). fitting (predicting) parameters are selected in the following order:

1. Values passed to the dictionary arguments of `fit`, `predict`, `predict_proba`, and `score` methods
2. Values passed to `sk_params`

3. The default values of the `keras.models.Sequential` `fit`, `predict`, `predict_proba` and `score` methods

When using scikit-learn's `grid_search` API, legal tunable parameters are those you could pass to `sk_params`, including fitting parameters. In other words, you could use `grid_search` to search for the best `batch_size` or `nb_epoch` as well as the model parameters.