

# **EXPERIMENTAL FEATURES IN SCIKIT-LEARN**

**Thomas J Fan**  
**@thomasjpfan**

**scikit-learn core developer**

# EXPERIMENTAL?



# COLUMNTRANSFORMER IN 0.20



```
class sklearn.compose. ColumnTransformer (transformers, remainder='drop', sparse_threshold=0.3, n_jobs=None,  
transformer_weights=None) \[source\]
```

Applies transformers to columns of an array or pandas DataFrame.

**EXPERIMENTAL:** some behaviors may change between releases without deprecation.

This estimator allows different columns or column subsets of the input to be transformed separately and the features generated by each transformer will be concatenated to form a single feature space. This is useful for heterogeneous or columnar data, to combine several feature extraction mechanisms or transformations into a single transformer.

# COLUMNTRANSFORMER IN 0.21 🤗💧

```
class sklearn.compose. ColumnTransformer (transformers, remainder='drop', sparse_threshold=0.3, n_jobs=None,  
transformer_weights=None, verbose=False) \[source\]
```

Applies transformers to columns of an array or pandas DataFrame.

This estimator allows different columns or column subsets of the input to be transformed separately and the features generated by each transformer will be concatenated to form a single feature space. This is useful for heterogeneous or columnar data, to combine several feature extraction mechanisms or transformations into a single transformer.

**IS THERE A BETTER WAY?** 🤔

**USE ENABLE\_\* 🤗**

**sklearn 0.21**

```
from sklearn.experimental import enable_hist_gradient_boosting
from sklearn.ensemble import HistGradientBoostingClassifier
```

# UPGRADE TO SKLEARN 0.22?

```
from sklearn.experimental import enable_hist_gradient_boosting  
from sklearn.ensemble import HistGradientBoostingClassifier
```

**or if "graduated" from experimental**

```
from sklearn.ensemble import HistGradientBoostingClassifier
```

**IMPLEMENTATION !?**



# IMPLEMENTATION 🧠💥

```
# sklearn/experimental/enable_hist_gradient_boosting.py
from ..ensemble._hist_gradient_boosting.gradient_boosting import (
    HistGradientBoostingClassifier,
    HistGradientBoostingRegressor)

from .. import ensemble

ensemble.HistGradientBoostingClassifier = HistGradientBoostingClassifier
ensemble.HistGradientBoostingRegressor = HistGradientBoostingRegressor
ensemble.__all__ += ['HistGradientBoostingClassifier',
                    'HistGradientBoostingRegressor']
```

# EXPERIMENTAL IN 0.21

```
from sklearn.experimental import enable_hist_gradient_boosting
from sklearn.ensemble import HistGradientBoostingClassifier

from sklearn.experimental import enable_iterative_imputer
from sklearn.impute import IterativeImputer
```

**THANK YOU!** 🧐

**@THOMASJPFAN**

**[github.com/thomasjpfan/sklearn\\_experimental\\_talk](https://github.com/thomasjpfan/sklearn_experimental_talk)**