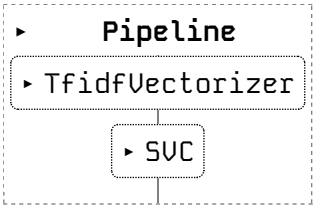
Conventional SVM Model training

```
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.datasets import fetch_20newsgroups
from sklearn.svm import SVC
from sklearn.metrics import classification_report
from sklearn.pipeline import make_pipeline

categories = ['alt.atheism', 'comp.graphics', 'sci.med', 'sci.space']
remove = ('headers', 'footers', 'quotes')

newsgroups_train = fetch_20newsgroups(subset='train', categories=categories, remove
newsgroups_test = fetch_20newsgroups(subset='test', categories=categories, remove=r
```

```
model_svm = make_pipeline(TfidfVectorizer(), SVC(kernel='linear'))
model_svm.fit(newsgroups_train.data, newsgroups_train.target)
```




```
predicted_categories = model_svm.predict(newsgroups_test.data)
report = classification_report(newsgroups_test.target, predicted_categories, target
print(report)
```

```
                    precision    recall  f1-score   support

       alt.atheism       0.83      0.76      0.80       319
     comp.graphics       0.87      0.86      0.87       389
           sci.med       0.88      0.79      0.83       396
         sci.space       0.74      0.87      0.80       394

          accuracy                           0.82      1498
         macro avg       0.83      0.82      0.82      1498
      weighted avg       0.83      0.82      0.82      1498
```