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gower 0.1.2



Latest version

`pip install gower`

Released: Nov 13, 2022

Python implementation of Gowers distance, pairwise between records in two data sets

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Project description

build	passing	pypi package	0.1.2	downloads/month	160k
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Introduction

Gower's distance calculation in Python. Gower Distance is a distance measure that can be used to calculate distance between two entity whose attribute has a mixed of categorical and numerical values. [Gower \(1971\) A general coefficient of similarity and some of its properties. Biometrics 27 857–874.](#)

More details and examples can be found on my personal website here: (<https://www.thinkdatascience.com/post/2019-12-16-introducing-python-package-gower/>)

Core functions are wrote by [Marcelo Beckmann](#).

Examples

 Forks: 19

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License: MIT License
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Author: [Dominic D](#) 

 gower, distance,
matrix

Requires: Python >=2.7

Maintainers



[wwwjk366](#)

Classifiers

License

- [OSI Approved :: MIT License](#)

Operating System

- [OS Independent](#)

Programming

Language

- [Python :: 2](#)

Installation

```
pip install gower
```

Generate some data

```
import numpy as np
import pandas as pd
import gower

Xd=pd.DataFrame({'age':[21,21,19, 30,21,21,19,30,None],
'gender':['M','M','N','M','F','F','F','F',None],
'civil_status':['MARRIED','SINGLE','SINGLE','SINGLE','MARRIED',None],
'salary':[3000.0,1200.0 ,32000.0,1800.0 ,2900.0 ,1100.0 ,2000.0 ,1000.0 ],
'has_children':[1,0,1,1,1,0,0,1,None],
'available_credit':[2200,100,22000,1100,2000,100,6000,22000]}
Yd = Xd.iloc[1:3,:].values
X = np.asarray(Xd)
Y = np.asarray(Yd)
```

Find the distance matrix

```
gower.gower_matrix(X)
```

```
array([[0.          , 0.3590238 , 0.6707398 , 0.31787416, 0.52622986, 0.59697855, 0.47778758, nan],
       [0.3590238 , 0.          , 0.6964303 , 0.3138769 , 0.16720603, 0.45600235, 0.6539635 , nan],
       [0.6707398 , 0.6964303 , 0.          , 0.6552807 , 0.6969697 , 0.740428 , 0.8151941 , nan],
       [0.31787416, 0.3138769 , 0.6552807 , 0.          , 0.48108295, 0.74818605, 0.34332284, nan],
       [0.52622986, 0.16720603, 0.6969697 , 0.48108295, 0.          , 0.2898751 , 0.4878362 , nan],
       [0.59697855, 0.45600235, 0.740428 , 0.74818605, 0.2898751 , 0.          , 0.4878362 , nan],
       [0.47778758, 0.6539635 , 0.8151941 , 0.34332284, 0.4878362 , 0.4878362 , 0.          , nan],
       [nan, nan, nan, nan, nan, nan, nan, nan]])
```



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```
[0.59697855, 0.45600235, 0.740428 , 0.74818605, 0.
 0.2898751 , 0.          , 0.57476616,          nan],
[0.47778758, 0.6539635 , 0.8151941 , 0.34332284, 0.
 0.4878362 , 0.57476616, 0.          ,          nan],
[          nan,          nan,          nan,          nan,
--
```

Find Top n results

```
gower.gower_topn(Xd.iloc[0:2,:], Xd.iloc[:,:], n = 5)
```

```
{'index': array([4, 3, 1, 7, 5]),
 'values': array([0.16872811, 0.31787416, 0.3590238 , 0.4
 dtype=float32)}
```



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