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SciPy v0.14.0 Reference Guide ([../index.html](http://docs.scipy.org/doc/scipy-0.14.0/index.html))

Statistical functions ( **scipy.stats**) ([../stats.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats.html))

[index](http://docs.scipy.org/doc/scipy-0.14.0/reference/index.html) ([../genindex.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/genindex.html))      [modules](http://docs.scipy.org/doc/scipy-0.14.0/reference/py-modindex.html) ([../py-modindex.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/py-modindex.html))

[next](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/spearmanr.html) ([scipy.stats.spearmanr.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/spearmanr.html))      [previous](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/f_oneway.html) ([scipy.stats.f\\_oneway.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/f_oneway.html))

## scipy.stats.pearsonr

**scipy.stats.pearsonr**(*x*, *y*)

[[source](#)]

(<http://github.com/scipy/scipy/blob/v0.14.0/scipy/stats/stats.py#L2392>)

Calculates a Pearson correlation coefficient and the p-value for testing non-correlation.

The Pearson correlation coefficient measures the linear relationship between two datasets. Strictly speaking, Pearson's correlation requires that each dataset be normally distributed. Like other correlation coefficients, this one varies between -1 and +1 with 0 implying no correlation. Correlations of -1 or +1 imply an exact linear relationship. Positive correlations imply that as *x* increases, so does *y*. Negative correlations imply that as *x* increases, *y* decreases.

The p-value roughly indicates the probability of an uncorrelated system producing datasets that have a Pearson correlation at least as extreme as the one computed from these datasets. The p-values are not entirely reliable but are probably reasonable for datasets larger than 500 or so.

<b>Parameters:</b>	<b><i>x</i></b> : ( <i>N</i> ,) <i>array_like</i>
	Input
	<b><i>y</i></b> : ( <i>N</i> ,) <i>array_like</i>
	Input
<b>Returns:</b>	( <i>Pearson's correlation coefficient</i> , <i>2-tailed p-value</i> )

### References

<http://www.statsoft.com/textbook/glossp.html#Pearson%20Correlation>  
(<http://www.statsoft.com/textbook/glossp.html#Pearson%20Correlation>)

### Previous topic

[scipy.stats.f\\_oneway](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/f_oneway.html) ([scipy.stats.f\\_oneway.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/f_oneway.html))

### Next topic

[scipy.stats.spearmanr](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/spearmanr.html) ([scipy.stats.spearmanr.html](http://docs.scipy.org/doc/scipy-0.14.0/reference/stats/spearmanr.html))