

DATA ANALYTICS REFERENCE DOCUMENT	
Document Title:	Trying to make sense of random generators
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REVISION HISTORY

Revision	Details of Modification(s)	Reason for modification	Date	By
0	Draft release	Document to practical use and use cases for random generators	2018/11/23 10:39	Gerhard van der Linde

Random Number Generation

This area has been a particular painful one so far and the more one look into a topic so fast the more elusive it becomes.

This section is an attempt at distilling a meaningful summary from the data analyst perspective to keep it simple but still use random generators is a meaningful way to approximate real world scenarios in a more meaningful way.

So for starters, a dump from the `numpy.random` documentation to work from.

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Random Number Generation
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Utility functions
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random      Uniformly distributed values of a given shape.
bytes       Uniformly distributed random bytes.
random_integers  Uniformly distributed integers in a given range.
random_sample  Uniformly distributed floats in a given range.
random      Alias for random_sample
ranf        Alias for random_sample
sample      Alias for random_sample
choice      Generate a weighted random sample from a given array-like
permutation Randomly permute a sequence / generate a random sequence.
shuffle     Randomly permute a sequence in place.
seed        Seed the random number generator.
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Compatibility functions
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rand        Uniformly distributed values.
randn       Normally distributed values.
ranf        Uniformly distributed floating point numbers.
randint     Uniformly distributed integers in a given range.
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```

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Univariate distributions
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beta	Beta distribution over <code>``[0, 1]``</code> .
binomial	Binomial distribution.
chisquare	:math:`\chi^2` distribution.
exponential	Exponential distribution.
f	F (Fisher-Snedecor) distribution.
gamma	Gamma distribution.
geometric	Geometric distribution.
gumbel	Gumbel distribution.
hypergeometric	Hypergeometric distribution.
laplace	Laplace distribution.
logistic	Logistic distribution.
lognormal	Log-normal distribution.
logseries	Logarithmic series distribution.
negative_binomial	Negative binomial distribution.
noncentral_chisquare	Non-central chi-square distribution.
noncentral_f	Non-central F distribution.
normal	Normal / Gaussian distribution.
pareto	Pareto distribution.
poisson	Poisson distribution.
power	Power distribution.
rayleigh	Rayleigh distribution.
triangular	Triangular distribution.
uniform	Uniform distribution.
vonmises	Von Mises circular distribution.
wald	Wald (inverse Gaussian) distribution.
weibull	Weibull distribution.
zipf	Zipf's distribution over ranked data.

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Multivariate distributions
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dirichlet	Multivariate generalization of Beta distribution.
multinomial	Multivariate generalization of the binomial distribution.
multivariate_normal	Multivariate generalization of the normal distribution.

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Standard distributions
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standard_cauchy	Standard Cauchy-Lorentz distribution.
standard_exponential	Standard exponential distribution.
standard_gamma	Standard Gamma distribution.
standard_normal	Standard normal distribution.
standard_t	Standard Student's t-distribution.

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Internal functions
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get_state	Get tuple representing internal state of generator.
set_state	Set state of generator.

From:

<http://hdip-data-analytics.com/> - **HDip Data Analytics**

Permanent link:

http://hdip-data-analytics.com/help/python/numpy_random

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