**Random sampling (numpy.random)**

**Simple random data**

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| [**rand**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.rand.html#numpy.random.rand)(d0, d1, ..., dn) | Random values in a given shape. |
| [**randn**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.randn.html#numpy.random.randn)(d0, d1, ..., dn) | Return a sample (or samples) from the “standard normal” distribution. |
| [**randint**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.randint.html#numpy.random.randint)(low[, high, size, dtype]) | Return random integers from *low* (inclusive) to *high* (exclusive). |
| [**random\_integers**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.random_integers.html#numpy.random.random_integers)(low[, high, size]) | Random integers of type np.int between *low* and *high*, inclusive. |
| [**random\_sample**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.random_sample.html#numpy.random.random_sample)([size]) | Return random floats in the half-open interval [0.0, 1.0). |
| [**random**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.random.html#numpy.random.random)([size]) | Return random floats in the half-open interval [0.0, 1.0). |
| [**ranf**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.ranf.html#numpy.random.ranf)([size]) | Return random floats in the half-open interval [0.0, 1.0). |
| [**sample**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.sample.html#numpy.random.sample)([size]) | Return random floats in the half-open interval [0.0, 1.0). |
| [**choice**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.choice.html#numpy.random.choice)(a[, size, replace, p]) | Generates a random sample from a given 1-D array |
| [**bytes**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.bytes.html#numpy.random.bytes)(length) | Return random bytes. |

**Permutations**

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| [**shuffle**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.shuffle.html#numpy.random.shuffle)(x) | Modify a sequence in-place by shuffling its contents. |
| [**permutation**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.permutation.html#numpy.random.permutation)(x) | Randomly permute a sequence, or return a permuted range. |

**Distributions**

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| [**beta**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.beta.html#numpy.random.beta)(a, b[, size]) | Draw samples from a Beta distribution. |
| [**binomial**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.binomial.html#numpy.random.binomial)(n, p[, size]) | Draw samples from a binomial distribution. |
| [**chisquare**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.chisquare.html#numpy.random.chisquare)(df[, size]) | Draw samples from a chi-square distribution. |
| [**dirichlet**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.dirichlet.html#numpy.random.dirichlet)(alpha[, size]) | Draw samples from the Dirichlet distribution. |
| [**exponential**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.exponential.html#numpy.random.exponential)([scale, size]) | Draw samples from an exponential distribution. |
| [**f**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.f.html#numpy.random.f)(dfnum, dfden[, size]) | Draw samples from an F distribution. |
| [**gamma**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.gamma.html#numpy.random.gamma)(shape[, scale, size]) | Draw samples from a Gamma distribution. |
| [**geometric**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.geometric.html#numpy.random.geometric)(p[, size]) | Draw samples from the geometric distribution. |
| [**gumbel**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.gumbel.html#numpy.random.gumbel)([loc, scale, size]) | Draw samples from a Gumbel distribution. |
| [**hypergeometric**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.hypergeometric.html#numpy.random.hypergeometric)(ngood, nbad, nsample[, size]) | Draw samples from a Hypergeometric distribution. |
| [**laplace**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.laplace.html#numpy.random.laplace)([loc, scale, size]) | Draw samples from the Laplace or double exponential distribution with specified location (or mean) and scale (decay). |
| [**logistic**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.logistic.html#numpy.random.logistic)([loc, scale, size]) | Draw samples from a logistic distribution. |
| [**lognormal**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.lognormal.html#numpy.random.lognormal)([mean, sigma, size]) | Draw samples from a log-normal distribution. |
| [**logseries**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.logseries.html#numpy.random.logseries)(p[, size]) | Draw samples from a logarithmic series distribution. |
| [**multinomial**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.multinomial.html#numpy.random.multinomial)(n, pvals[, size]) | Draw samples from a multinomial distribution. |
| [**multivariate\_normal**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.multivariate_normal.html#numpy.random.multivariate_normal)(mean, cov[, size, ...) | Draw random samples from a multivariate normal distribution. |
| [**negative\_binomial**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.negative_binomial.html#numpy.random.negative_binomial)(n, p[, size]) | Draw samples from a negative binomial distribution. |
| [**noncentral\_chisquare**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.noncentral_chisquare.html#numpy.random.noncentral_chisquare)(df, nonc[, size]) | Draw samples from a noncentral chi-square distribution. |
| [**noncentral\_f**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.noncentral_f.html#numpy.random.noncentral_f)(dfnum, dfden, nonc[, size]) | Draw samples from the noncentral F distribution. |
| [**normal**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.normal.html#numpy.random.normal)([loc, scale, size]) | Draw random samples from a normal (Gaussian) distribution. |
| [**pareto**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.pareto.html#numpy.random.pareto)(a[, size]) | Draw samples from a Pareto II or Lomax distribution with specified shape. |
| [**poisson**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.poisson.html#numpy.random.poisson)([lam, size]) | Draw samples from a Poisson distribution. |
| [**power**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.power.html#numpy.random.power)(a[, size]) | Draws samples in [0, 1] from a power distribution with positive exponent a - 1. |
| [**rayleigh**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.rayleigh.html#numpy.random.rayleigh)([scale, size]) | Draw samples from a Rayleigh distribution. |
| [**standard\_cauchy**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.standard_cauchy.html#numpy.random.standard_cauchy)([size]) | Draw samples from a standard Cauchy distribution with mode = 0. |
| [**standard\_exponential**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.standard_exponential.html#numpy.random.standard_exponential)([size]) | Draw samples from the standard exponential distribution. |
| [**standard\_gamma**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.standard_gamma.html#numpy.random.standard_gamma)(shape[, size]) | Draw samples from a standard Gamma distribution. |
| [**standard\_normal**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.standard_normal.html#numpy.random.standard_normal)([size]) | Draw samples from a standard Normal distribution (mean=0, stdev=1). |
| [**standard\_t**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.standard_t.html#numpy.random.standard_t)(df[, size]) | Draw samples from a standard Student’s t distribution with *df* degrees of freedom. |
| [**triangular**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.triangular.html#numpy.random.triangular)(left, mode, right[, size]) | Draw samples from the triangular distribution over the interval [left, right]. |
| [**uniform**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.uniform.html#numpy.random.uniform)([low, high, size]) | Draw samples from a uniform distribution. |
| [**vonmises**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.vonmises.html#numpy.random.vonmises)(mu, kappa[, size]) | Draw samples from a von Mises distribution. |
| [**wald**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.wald.html#numpy.random.wald)(mean, scale[, size]) | Draw samples from a Wald, or inverse Gaussian, distribution. |
| [**weibull**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.weibull.html#numpy.random.weibull)(a[, size]) | Draw samples from a Weibull distribution. |
| [**zipf**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.zipf.html#numpy.random.zipf)(a[, size]) | Draw samples from a Zipf distribution. |

**Random generator**

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| [**RandomState**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.RandomState.html#numpy.random.RandomState) | Container for the Mersenne Twister pseudo-random number generator. |
| [**seed**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.seed.html#numpy.random.seed)([seed]) | Seed the generator. |
| [**get\_state**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.get_state.html#numpy.random.get_state)() | Return a tuple representing the internal state of the generator. |
| [**set\_state**](https://docs.scipy.org/doc/numpy/reference/generated/numpy.random.set_state.html#numpy.random.set_state)(state) | Set the internal state of the generator from a tuple. |