How to Create a NumPy Matrix with Random Numbers

Authored by

stats writer

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To create a NumPy matrix with random numbers, you can use the numpy.random.rand() function. This will generate a matrix filled with random numbers drawn from a uniform distribution over . You can also specify the shape of the matrix you want by passing the shape as a tuple to the function. You can also generate a matrix filled with random numbers from other distributions, such as the normal distribution, by specifying the appropriate keyword arguments.

You can use the following methods to create a NumPy matrix with random numbers:

Method 1: Create NumPy Matrix of Random Integers

np.random.randint(low, high, (rows, columns))

Method 2: Create NumPy Matrix of Random Floats

np.random.rand(rows, columns)

The following examples show how to use each method in practice.

Example 1: Create NumPy Matrix of Random Integers

The following code shows how to create a NumPy matrix of random values that ranges from **0** to **20** with a shape of **7 rows** and **2 columns**:

import numpy as np

#create NumPy matrix of random integers
np.random.randint(0, 20, (7, 2))

array(,
,
,
,
,
,
])

Notice that each value in the matrix ranges between 0 and 20 and the final shape of the matrix is 7 rows and 2 columns.

Example 2: Create NumPy Matrix of Random Floats

The following code shows how to create a NumPy matrix with random float values between **0** and **1** and a shape of **7** columns and **2** rows:

```
import numpy as np

#create NumPy matrix of random floats
np.random.rand(7, 2)

array(,
,
,
,
,
,
])
```

The result is a NumPy matrix that contains random float values between 0 and 1 with a shape of 7 rows and 2 columns.

Note that you can also use the NumPy **round()** function to round each float to a certain number of decimal places.

For example, the following code shows how to create a NumPy matrix of random floats each rounded to 2 decimal places:

```
import numpy as np

#create NumPy matrix of random floats rounded to 2 decimal places
np.round(np.random.rand(5, 2), 2)

array(,
,
,
,
])
```

The following tutorials explain how to perform other common conversions in Python: