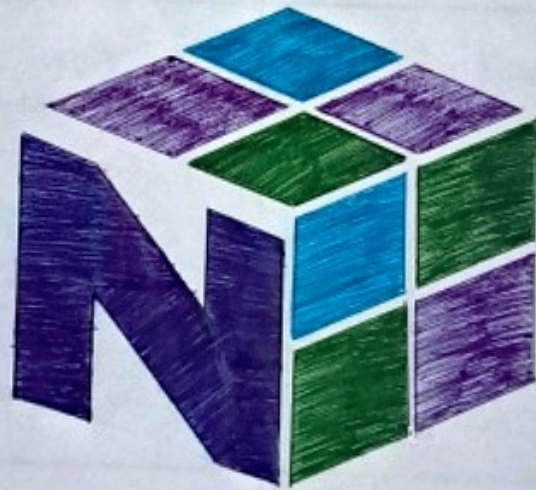


Important NumPy Methods For Data Scientists

NumPy is a Python library used for working with arrays. It also has functions for working in domain of linear algebra, fourier transform, and matrices. NumPy was created in 2005 by Travis Oliphant. It is an open source project and you can use it freely. NumPy stands for Numerical Python.




NumPy

NumPy Array Creation Methods

Method	Description
<code>np.array(<list>)</code>	NumPy array from Python list
<code>np.array(<list-of-lists>)</code>	NumPy array from list of lists
<code>np.array(<Pandas-series>)</code>	NumPy array from PD Series
<code>df.values</code>	NumPy array from DataFrame
<code>np.zeros(<size>)</code>	NumPy array from all zeros
<code>np.ones(<size>)</code>	NumPy array from all ones
<code>np.eye(<size>)</code>	Identity NumPy array
<code>np.arange(<start>, <stop>, <step>)</code>	Equally spaced NumPy array with specific step
<code>np.linspace(<start>, <stop>, <count>)</code>	Equally spaced NumPy array with specific size
<code>np.random.randint(<low>, <high>, <size>)</code>	NumPy array of random ints
<code>np.random.random(<size>)</code>	NumPy array of random floats

Mathematical Operations

Method	Description
<code>np.sin(<np-array>)</code>	Trigonometric Functions
<code>np.cos(<np-array>)</code>	
<code>np.tan(<np-array>)</code>	
<code>np.floor(<np-array>)</code>	Element-wise floor value
<code>np.ceil(<np-array>)</code>	Element-wise ceiling value
<code>np rint(<np-array>)</code>	Round to nearest int
<code>np.round_(<np-array>, <decimal-places>)</code>	Round to decimal places
<code>np.exp(<np-array>)</code>	Element-wise exponent
<code>np.log(<np-array>)</code>	Element-wise logarithm
<code>np.sqrt(<np-array>)</code>	Element-wise square root
<code>np.sum(<np-array>,<axis>)</code>	Sum along an axis
<code>np.mean(<np-array>,<axis>)</code>	mean along an axis
<code>np.std(<np-array>,<axis>)</code>	Std. dev along on axis
	

NumPy Array Manipulation Methods

Method	Description
<code>array.reshape(<new-shape>)</code>	Reshape NumPy Array
<code>array.transpose()</code> OR <code>array.T</code>	Transpose NumPy Array
<code>np.concatenate(<np-arrays>, <axis>)</code>	Concatenate NumPy Array
<code>np.flatten(<Nd-np-array>)</code>	Flatten a NumPy Array
<code>np.unique(<np-array>, <axis>)</code>	Find unique elements
<code>array.tolist()</code>	NumPy Array to List

Matrix and Vector Operations

Method	Description
<code>np.dot(<np-array1>, <np-array2>)</code>	Dot Product
<code>np.matmul(<np-array1>, <np-array2>)</code>	Matrix Multiplication
<code>np-array1 @ np-array2</code>	
<code>np.linalg.norm(<np-array>)</code>	Vector

Search Methods

Method	Description
<code>np.argmax(<np-array>, <axis>)</code>	Max Element Index
<code>np.argmin(<np-array>, <axis>)</code>	Min Element Index
<code>np.where(<condition>, <true-return-value>, <false-return-value>)</code>	Conditional search and Replacement
<code>np.nonzero(<np-array>)</code>	Index of non-zero elements

Sorting Methods

Method	Description
<code>np.sort(<np-array>, <axis>)</code>	Sort Array
<code>np.argsort(<np-array>, <axis>)</code>	Return the order of indices that sort the array