

Concept: Numpy Basics

Numpy (Numerical Python) is a library for fast mathematical computation using arrays. It supports multi-dimensional arrays, broadcasting, and numerous mathematical functions.

Unlike Python lists, numpy arrays are homogeneous and more efficient in memory and performance.

Common operations include array creation, reshaping, slicing, and element-wise operations.

```
import numpy as np
arr = np.array([1, 2, 3, 4])
print('Array:', arr)
print('Mean:', np.mean(arr))

matrix = np.array([[1, 2], [3, 4]])
print('Matrix sum:', np.sum(matrix))
```