Explanatory Note: Tensors

Tensors are n-dimensional arrays with a uniform type. Especially when referring specifically of Neural network data representation, this is accomplished via a data repository known as the tensor. Tensors are generalizations of matrices to N-dimensional space.

Features:

Tensors can also be converted into numpy arrays .

You can do basic math on tensors, including addition, element-wise multiplication, and matrix multiplication. Tensors often contain floats and ints, but have many other types, including: complex number , strings.

All tensors are immutable like Python numbers and strings: you can never update the contents of a tensor, only create a new one.

Scaler (Rank 0) Tensors - A tensor that contains only one number is called a scalar.

Vector (Rank 1) Tensors - An array of numbers is called a vector, or 1-D Tensor.

Matrices (Rank 2) or 2D Tensors - An array of vectors is a matrix or 2-D Tenso

3-D Tensor and Higher Dimensional Tensor - If you pack such matrices in a new array, you obtain a 3-D Tensor.