nn.logsoftmax

```

Copy fnlogsoftmax(tensor:@Tensor, axis:usize)->Tensor

```

Applies the natural log to Softmax function to an n-dimensional input Tensor consisting of values in the range [0,1].

! log softmax (x i) = log ⁡ (f r a c e x i ∑ j = 1 n e x j) \text{log softmax}(x_i) = \log(frac{e^{x_i}}{\sum_{j=1}^n e^{x_j}})

Args

- tensor
- (@Tensor
-) - The input tensor.
- axis
- (usize
-) - The axis along which to compute the natural lof softmax outputs.
-

Returns

A Tensor of fixed point numbers with the same shape than the input Tensor.

Type Constraints

Constrain input and output types to fixed point tensors.

Examples

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Copy usecore::array::{ArrayTrait,SpanTrait};

useorion::operators::tensor::{TensorTrait,Tensor,FP8x23}; useorion::operators::nn::{NNTrait,FP8x23NN};
useorion::numbers::{FP8x23,FixedTrait};

fnlogsoftmax_example()->Tensor { lettensor=TensorTrait:::new( shape:array![2,2].span(), data:array![
FixedTrait::new(0,false), FixedTrait::new(1,false), FixedTrait::new(2,false), FixedTrait::new(3,false), ] .span(), );

returnNNTrait::logsoftmax(@tensor,1); } Thiswill first generate the softmax output tensor

[[2255697,6132911],[2255697,6132911]] // The fixed point representation of // [[0.2689,
0.7311],[0.2689, 0.7311]]

Applyingthe natural log to this tensor yields

// The fixed point representation of: // [[-1.3134, -0.3132],[-1.3134, -0.3132]]

```

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Last updated3 months ago