Add Operator

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Definition & Gradient

The Addition Operator is defined as $f(u, v) = u + v$. To find the gradient w.r.t u and v, we will use the sum rule, which is defined as:

$$\frac{\delta}{\delta x}(u + v) = \frac{\delta u}{\delta x} + \frac{\delta v}{\delta x}$$

To find the gradient w.r.t u, we will set u as our x and treat v as a constant, which gives us the following:

$$\frac{\delta}{\delta u}(u + v) = \frac{\delta u}{\delta u} + \frac{\delta v}{\delta u} = 1$$

To find the gradient w.r.t v, we will set v as our x and treat u as a constant, which gives us the following:

$$\frac{\delta}{\delta v}(u + v) = \frac{\delta u}{\delta v} + \frac{\delta v}{\delta v} = 1$$

Therefore, we can say that the gradient w.r.t u is 1, and the gradient w.r.t v is 1.