

Pullback / vjp rule for scalar addition

$$f(x, y) = x + y = z$$

$$f: \mathbb{R} \times \mathbb{R} \rightarrow \mathbb{R}$$

$$\bar{x} = \bar{z} \frac{\partial f}{\partial x} = \bar{z} \cdot 1 = \bar{z}$$

$$\bar{y} = \bar{z} \frac{\partial f}{\partial y} = \bar{z} \cdot 1 = \bar{z}$$

$$B(+, (x, y), (\bar{z},)) = \left(\underbrace{(x+y)}_{\bar{z}}, \underbrace{(\bar{z}, \bar{z})}_{\bar{x} \quad \bar{y}} \right)$$