

Differentiation

1° - computing them "by hand" $\rightarrow \frac{\partial f}{\partial x_i} \approx \frac{f(x + \epsilon_i) - f(x - \epsilon_i)}{2\epsilon}$

but, how to choose ϵ_i ? (NUMERICAL DIFFERENTIATION)

2° - automatic differentiation \rightarrow make the computer do it by us!

Parsing Tree \Rightarrow its nodes operate on constant/variable
 \uparrow
leaf elements are always constant/variable
compiler does it for us! $\left\{ \begin{array}{l} \text{intermediate operations} \end{array} \right.$