Welcome to Deep Learning

Goals

At the end of this class, you should be able to:

Design, implement, and train your own deep network on any data you wish.

Plan

- Introduction / background
- First example (1-layer "deep" network)
- Deep networks
- Residuals and Normalizations (deeper networks)
- Convolution
- Transformers
- Making it work

At the end of this class, you should be able to:

Design, implement, and train your own deep network on any data you wish.

Content

Slides

Linear regression

Regression model:

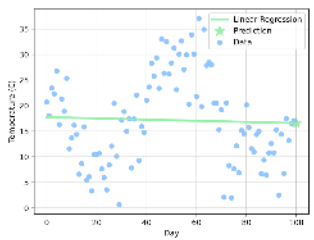
$$f_\theta : \mathbb{R}^n \to \mathbb{R}^d$$

Linear regression:

$$f_\theta(\mathbf{x}) = \mathbf{W}\mathbf{x} + \mathbf{b}$$

Parameter of linear regression model:

$$\theta = (\mathbf{W}, \mathbf{b})$$



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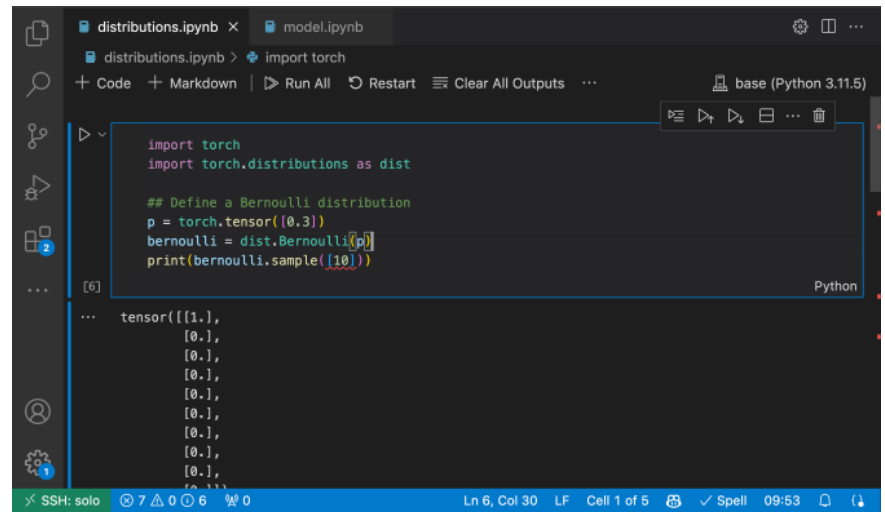
Hands-on notebooks



Have fun!!