Machine learning from scratch

Lecture 2: Convex optimization

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Context reminder

living area (m^2)	# bedrooms	intercept	price (1000's BGN)
50	1	1	30
76	2	1	48
26	1	1	12
102	3	1	90

$$h(\boldsymbol{x}) = \sum_{j=0}^{d} \theta_j x_j = \theta^T \boldsymbol{x}$$

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Suppose we chose the following loss function:

$$\ell(y, \hat{y}) = \frac{1}{2}(y - \hat{y})^2$$

This leads to the following least squares *cost function*:

$$J(\theta) = \frac{1}{2} \sum_{i=1}^{n} \left(h\left(\boldsymbol{x}^{(i)}\right) - y^{(i)} \right)^2$$

This problem the **ordinary least squares** (OLS) regression model.

Thank you! Questions?

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https://github.com/azubiolo/itstep