

# CS420 Machine Learning

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## 1 Prerequisites

### 1.1 ML's Goal

Machine learning has a loss function  $\mathcal{L}$ , and we have to let it take the minimum by learning the parameters of  $f_\theta$ .

$$\min\{\frac{1}{N}\sum_{i=1}^N\mathcal{L}(y_i, f_\theta(x_i))\}$$

### 1.2 Terminologies

**Hyper-parameter** Those parameters which are given artificially. They cannot be determined by learning model.

## 2 Linear Model