Regression basics
dark horse of statistics

Chuvakin Sergey

«School of Advanced Studies»

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Outline

- ▶ Why do we need it?
- ▶ Applications
- ▶ Formal representation
- ▶ Intuition behind
- ▶ Estimators of regression
- ▶ Optimzations for regression
- ▶ Assumtions

Why do we need it?

- ▶ *Forcast* future
- ▶ *Explain* present and the past

Applications

- ▶ Social Sciences (in broad sense)
- ▶ Economics
- ▶ Natural Sciences (originally came from Phisics)
- ▶ Business
- ▶ Medicine (Pharmacology)
- ▶ Urban Studies
- ▶ Criminology
- ▶ etc

Formal representation

Things in «real» abstract world:

$$\hat{y} = \beta X \tag{1}$$

Things we are doing in statistics:

$$\hat{y} = \beta X + \hat{\epsilon} \tag{2}$$