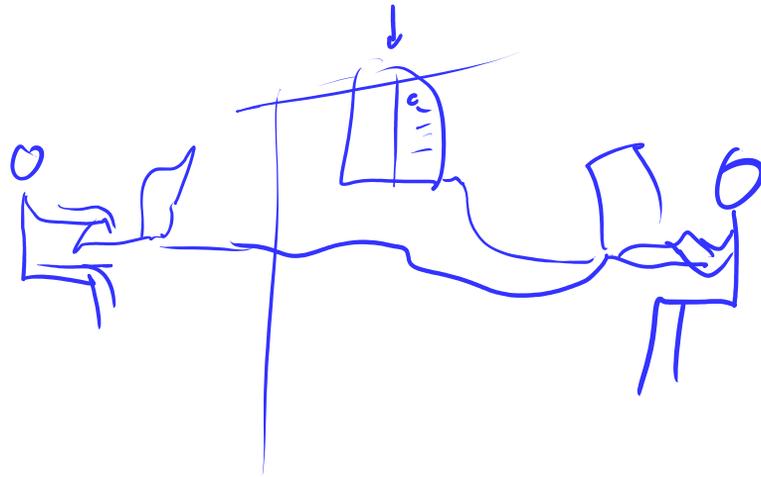




Turing Test

define "Intelligent"
artificial intelligence



Omits from intelligence:

humaness, artificiality

Personality

emotional intelligence

Creativity

consciousness

ELIZA

1966

AI as part of CS

- Fool humans into thinking computer is human
- Classical AI → human-created algorithms do "intelligent" things
 - Planning
 - dimension reduction
- • Machine Learning
 1. define a family of function
 2. pick one fun to be close to some data
 - 3 use that function

height

$$y = \underbrace{m}_m x + \underbrace{b}_b$$

Parameters

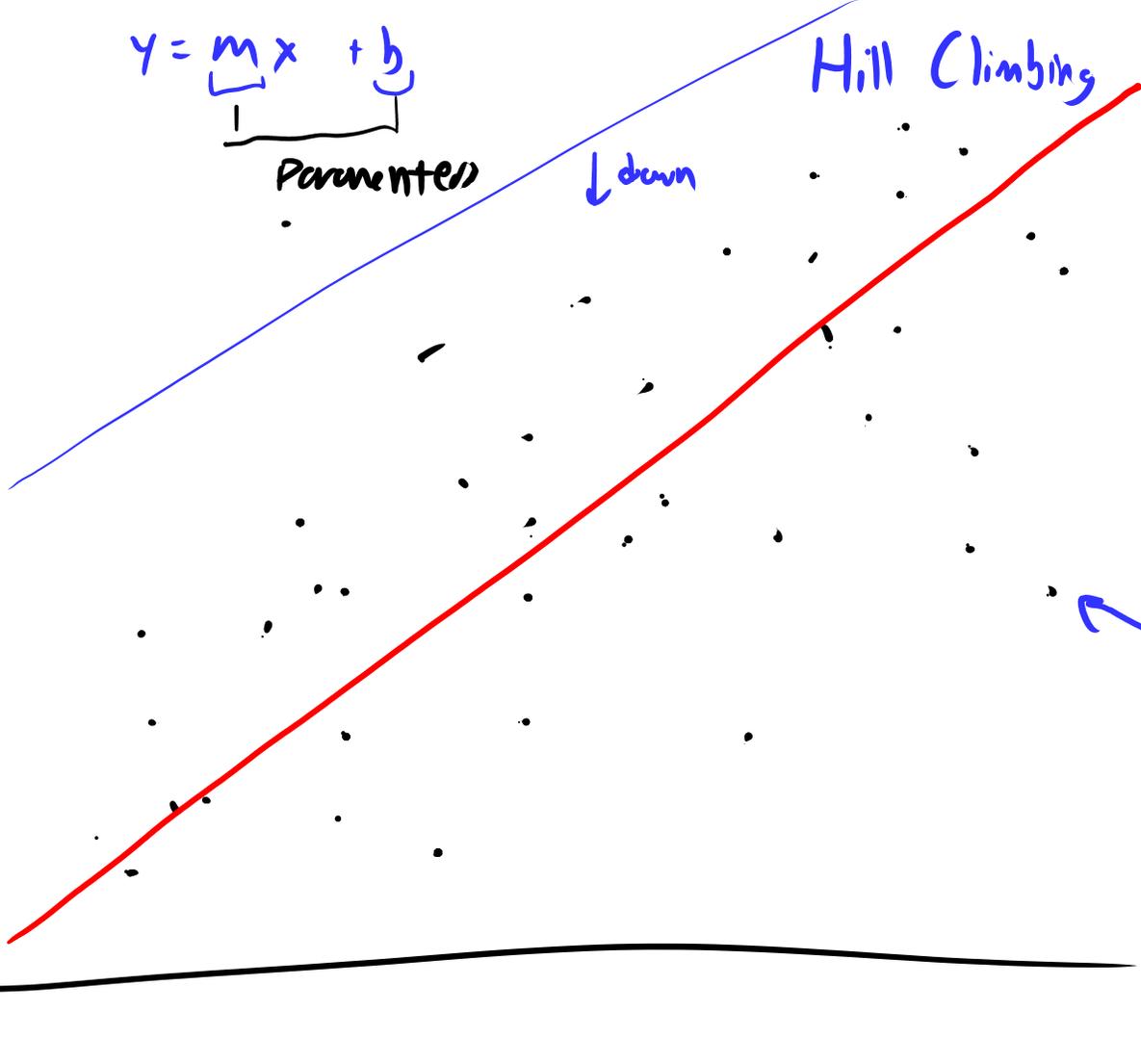
Hill Climbing

Regression
or
→ Training ←

↓ down

Training data

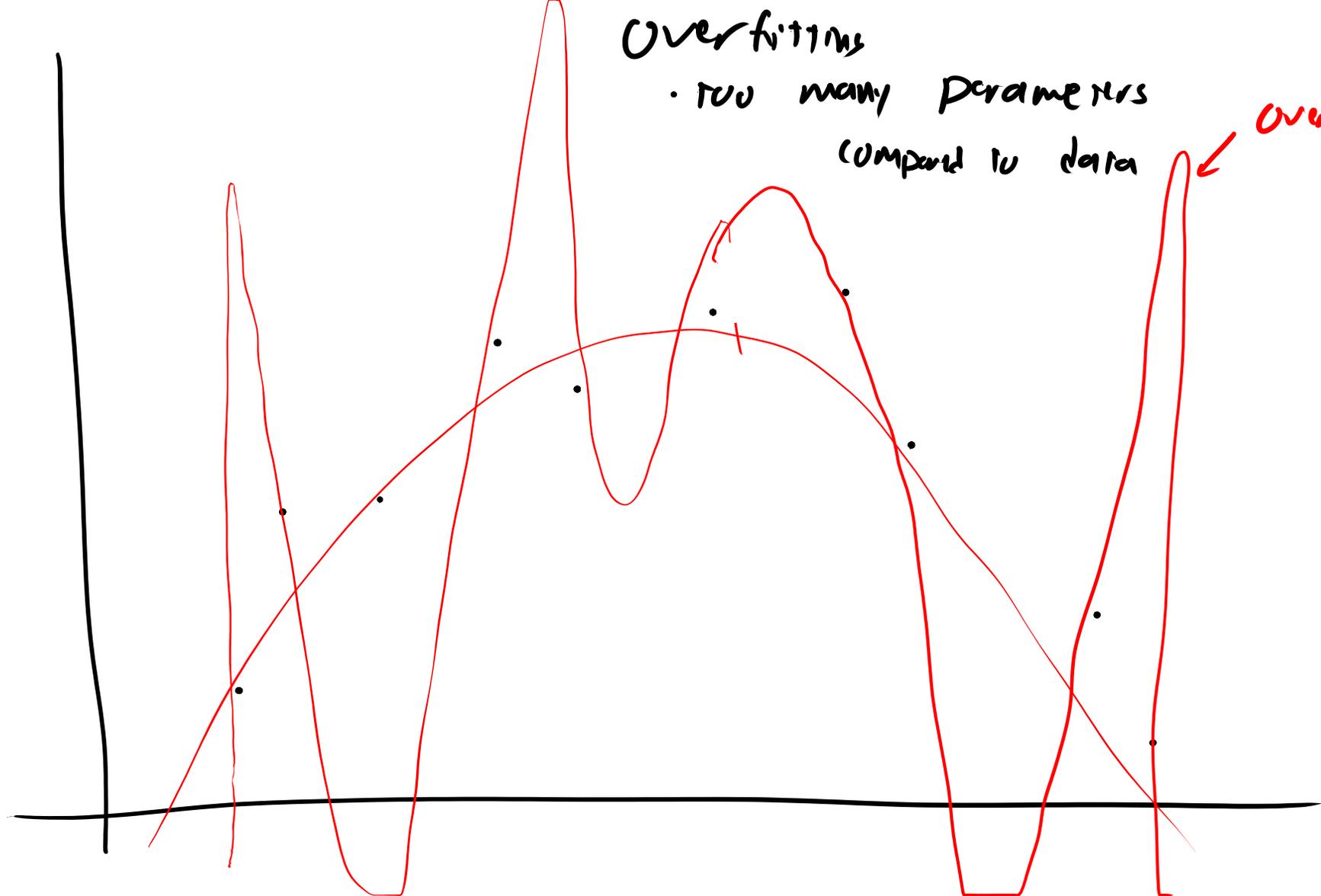
weight



Overfitting

- too many parameters compared to data

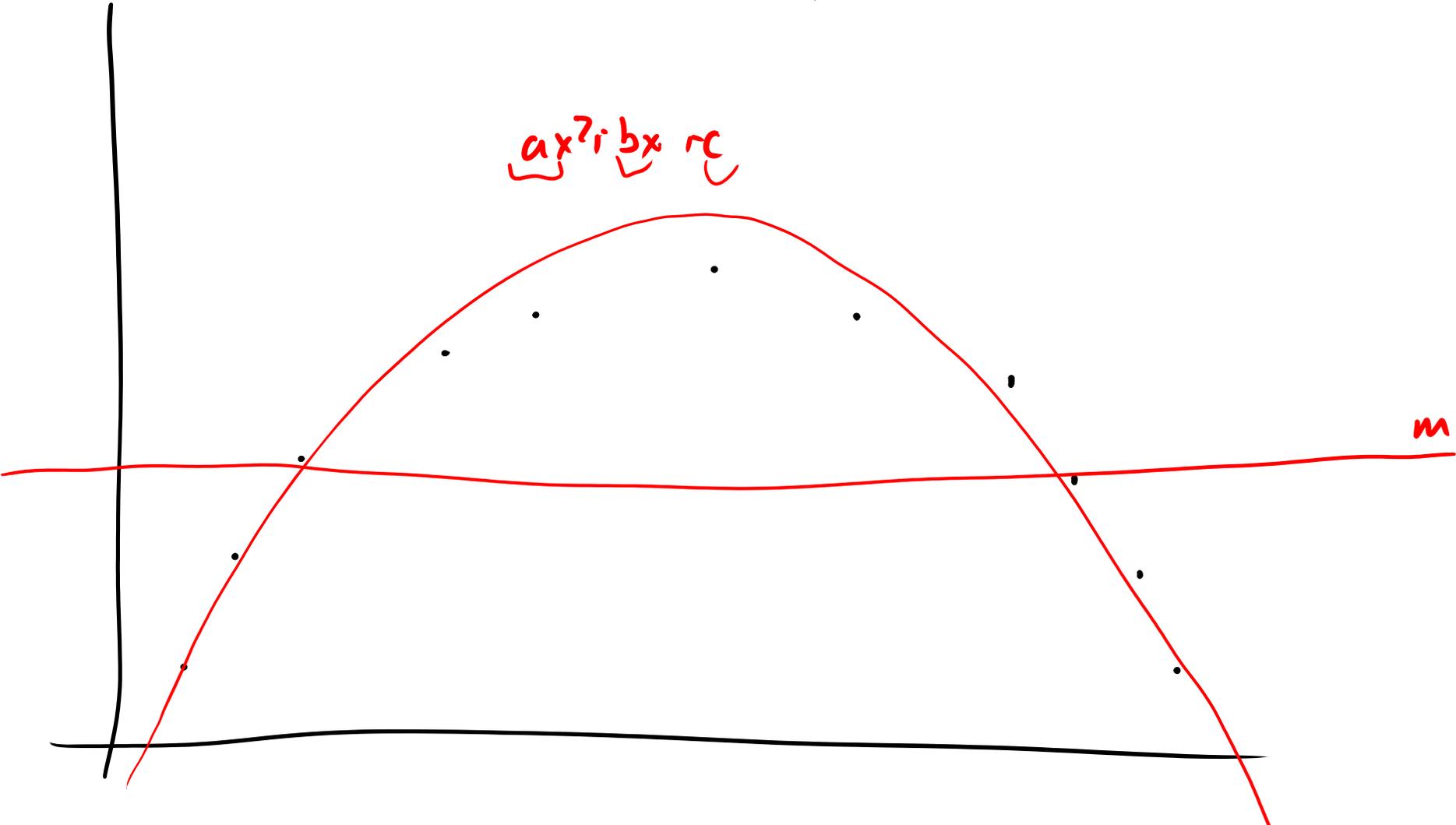
Overfit



too few parameters

$$\underbrace{ax^2 + bx + c}$$

$mx + b$



Internet-scale Big Data

Natural - language process

Human lang in / at

→ 100,000 words

Quadrillion of words of net (Internet)

Tech under
\$ 100,000 / year

double productivity

electricity

\$.14 / kWh