

AI Background Knowledge

2016-5-25

中国围棋协会

Google

浙江省体育局

中国乌镇 围棋峰会

The Future of Go Summit in Wuzhen

中国围棋协会

Google

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Shot on S10
Glance Dual Camera



Objective

- Next 2 - 4 months
 - AI basic knowledge & tools usage
 - Try to address ***practical*** problems
- Next One hour
 - Basics Information
 - Open a window

Outline

- What Can AI Do In Our Company
- Basics
- Tools
- Advice

What Can AI Do In Our Company Today

Speech Recognition

Recommendation & Ads - News, Emoji, Gif, Sticker ...

Engine

....

Basics

- Probabilities Statistics
- Bayes Formula
- Basics of Machine learning & Deep Learning

Probability Statistics

From Regulation to Statistics

e.g.

The pen in the box

The box in the pen

Probability Statistics

Definition

$$P(A)$$

$$P(A \cap B) = P(A|B) P(B)$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

Bayes Formula

$$P(A | B) P(B) = P(A \cap B) = P(B \cap A) = P(B | A) P(A)$$

$$P(A|B) = \frac{P(B|A) P(A)}{P(B)}$$

Bayes Formula

e.g.

Recommendation: buy A $\xrightarrow{P(B|A)}$ buy B \Rightarrow buy B \rightarrow buy A ?

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

spam mail detection $P(S|W)$

Machine Learning & Deep Learning

- Data Scale & Normalization
- 『Convex』 Optimization & Loss Function
- Predict

[spark ml doc](#)

Tools

TensorFlow

<https://www.tensorflow.org/>

[tensorflow introduction](#)

Example

$$y = W * x + b$$

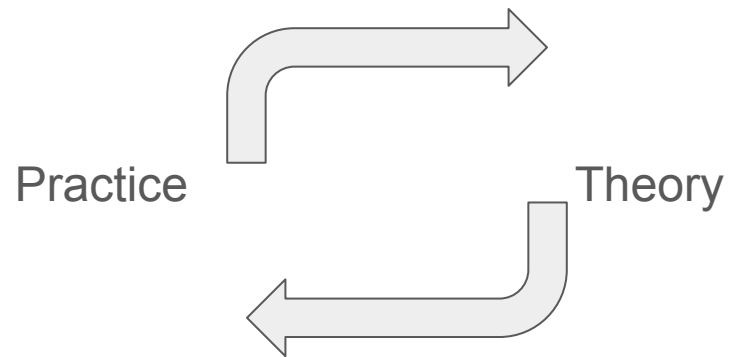
Assume we know: (x, y) pairs

How to evaluate: W, b

Simple Demo

Advice

数学之美



Q & A