

BOT or NOT?

Das was, weshalb und wie des Maschinellen Lernens

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@lambdaTotoro (@chaos.social)

Small Talk in Intelligent Systems

Mein Studium:
„Intelligente Systeme“.

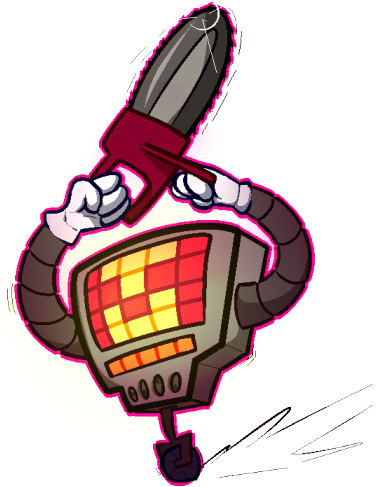
Was war wohl die häufigste
Frage an meinen Studiengang?

Small Talk in Intelligent Systems

Mein Studium:
„Intelligente Systeme“.

Was war wohl die häufigste
Frage an meinen Studiengang?

„Na, wie lange dauert
es noch bis zur
Roboterapokalypse?“



amazon

The Amazon logo, featuring the word "amazon" in a bold, black, sans-serif font. Below the text is a curved orange arrow that starts under the 'a' and points towards the 'n', resembling a smile.

amazon





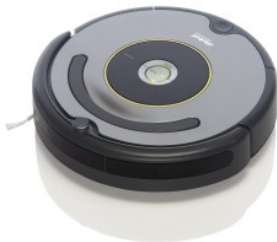
Warum überhaupt
Maschinelles Lernen?

Das Problem ist zu schwierig für
eine einzelne Person. Ich werde
mein Elektronengehirn
befragen.





Verschiedene Welten (1)



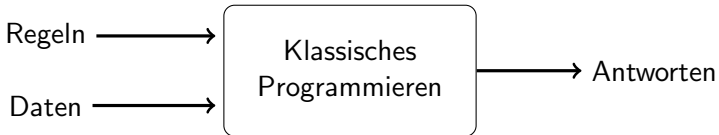
Select all squares with street signs.

Report a problem

Verify

The image shows a 4x4 grid of 16 small images. The images are a street scene with a green truck and a street sign. The street sign is green with white text and a white arrow pointing right. The text on the sign is 'Main Street' and 'Department of City Planning'. The truck is green and has '1000' on its side. The background shows a street with a fence and trees.

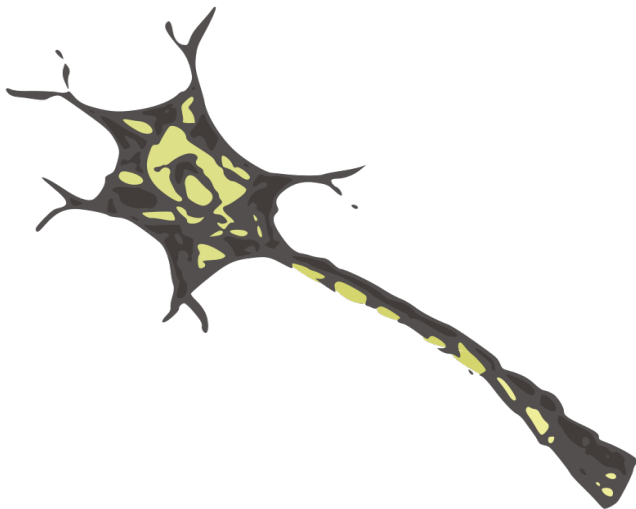
Verschiedene Welten (2)

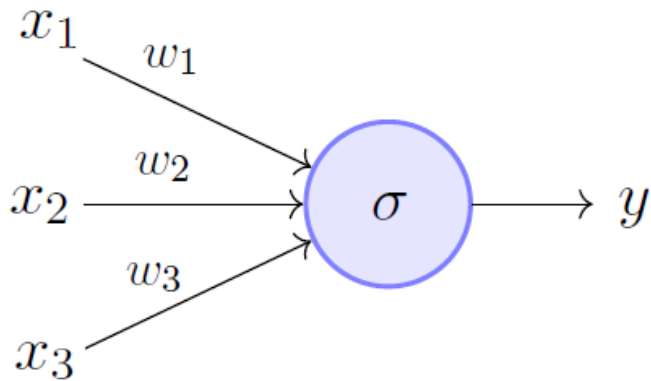


Wie funktioniert
Maschinelles Lernen?

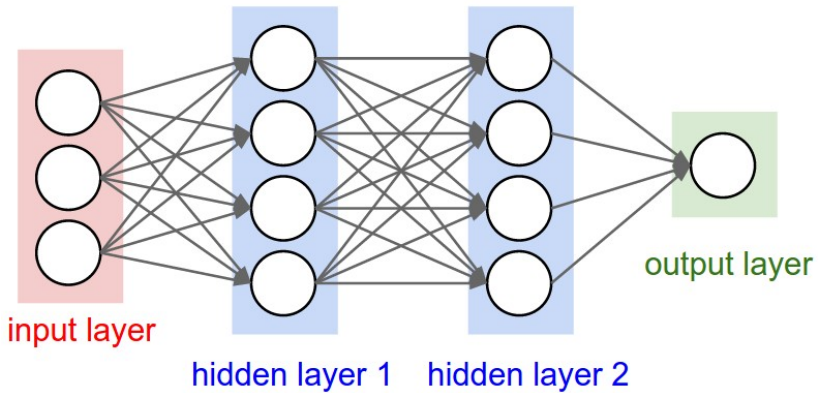
Imitation - Mehr als nur Anerkennung!







Artificial Neuron





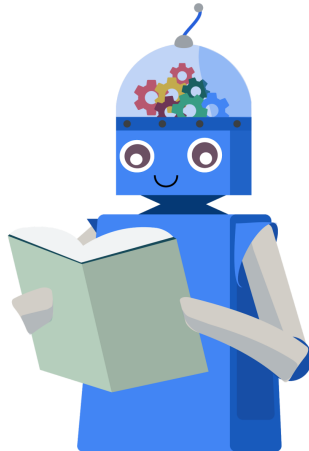
**FIRE TOGETHER
=
WIRE TOGETHER**

Was ist einfach?

Generell gilt: Je ...

- übersichtlicher
- mehr Daten
- weniger Rückfragen

...desto gut! Aber es gibt ein paar beliebte Fallen!



Nichts ist wie es scheint!

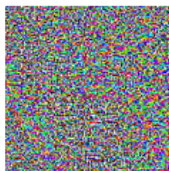


x

“panda”

57.7% confidence

$+ .007 \times$



$\text{sign}(\nabla_x J(\theta, x, y))$

“nematode”

8.2% confidence

$=$



$x +$

$\epsilon \text{sign}(\nabla_x J(\theta, x, y))$

“gibbon”

99.3 % confidence

Nichts ist wie es scheint!

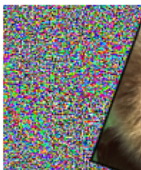


x

“panda”

57.7% confidence

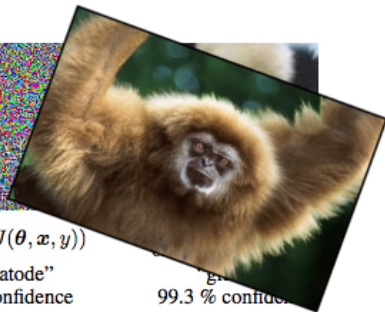
$+ .007 \times$



$\text{sign}(\nabla_x J(\theta, x, y))$

“nematode”

8.2% confidence



99.3 % confidence

Was wird gelernt?



Bot or Not?

Vom Lernen zum Gedicht
und vom Gedicht zum Gehirn

word2vec (1)

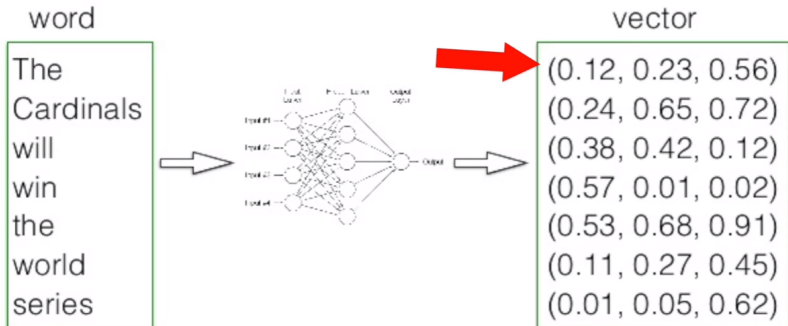
“You shall know a word by the company it keeps”
– J.R. Firth

...an efficient method for learning high quality distributed vector ...

Diagram illustrating the word2vec concept:

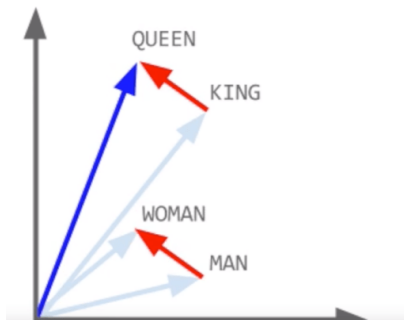
- The phrase "an efficient method for learning high quality distributed vector" is shown.
- The words "an efficient method for" are grouped under a bracket labeled "context".
- The word "learning" is highlighted in yellow, with a blue arrow pointing to it from below, labeled "focus word".
- The words "high quality distributed vector" are grouped under a bracket labeled "Context".

word2vec (2)

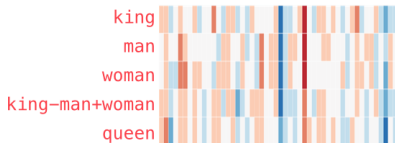


word2vec (3)

So king + man - woman = queen!



king - man + woman \approx queen



word2vec + Tensorflow = ???



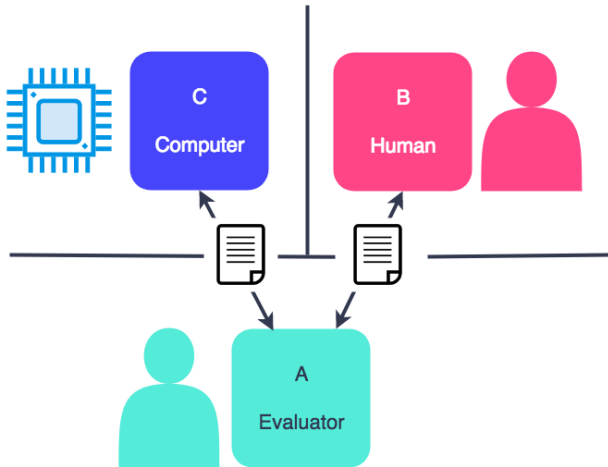
Computerkunst

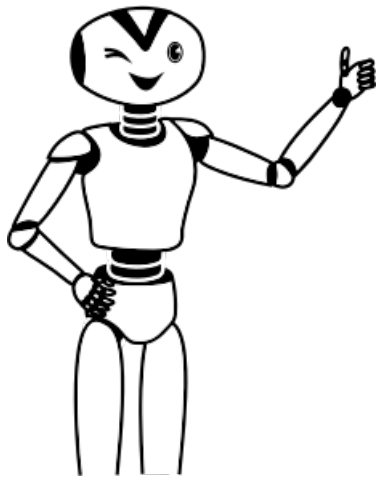


Turing Test (1)



Turing Test (2)





Vielen Dank
für's
Zuhören!