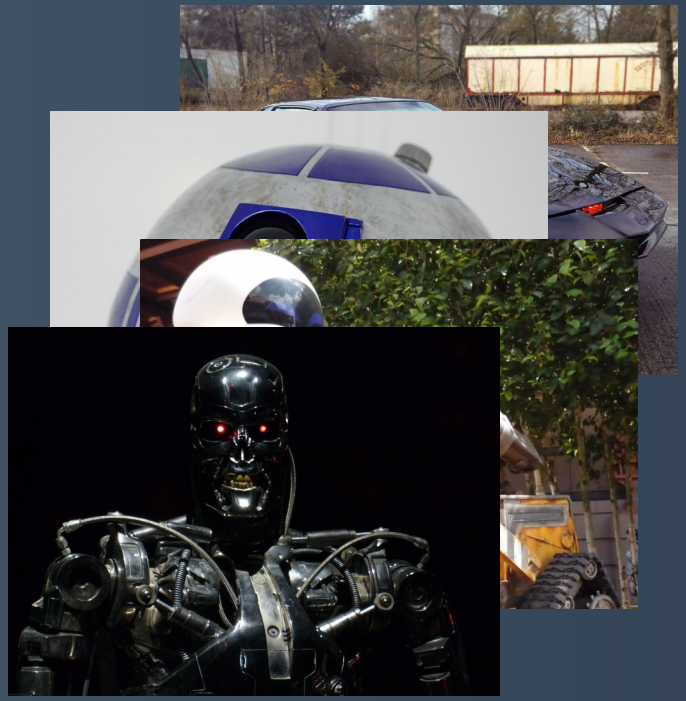
WOCHE 1
DIE WELT DER KI

WOCHE 1 EINHEIT 1

WAS IST KI?



Fährt selbst
und ständig.
CHARITÉ
EASY MILE
be mit Berlin
BVG
EZ10

Künstliche Intelligenz ist die von Maschinen demonstrierte Intelligenz, im Gegensatz zu der von Menschen demonstrierten natürlichen Intelligenz.

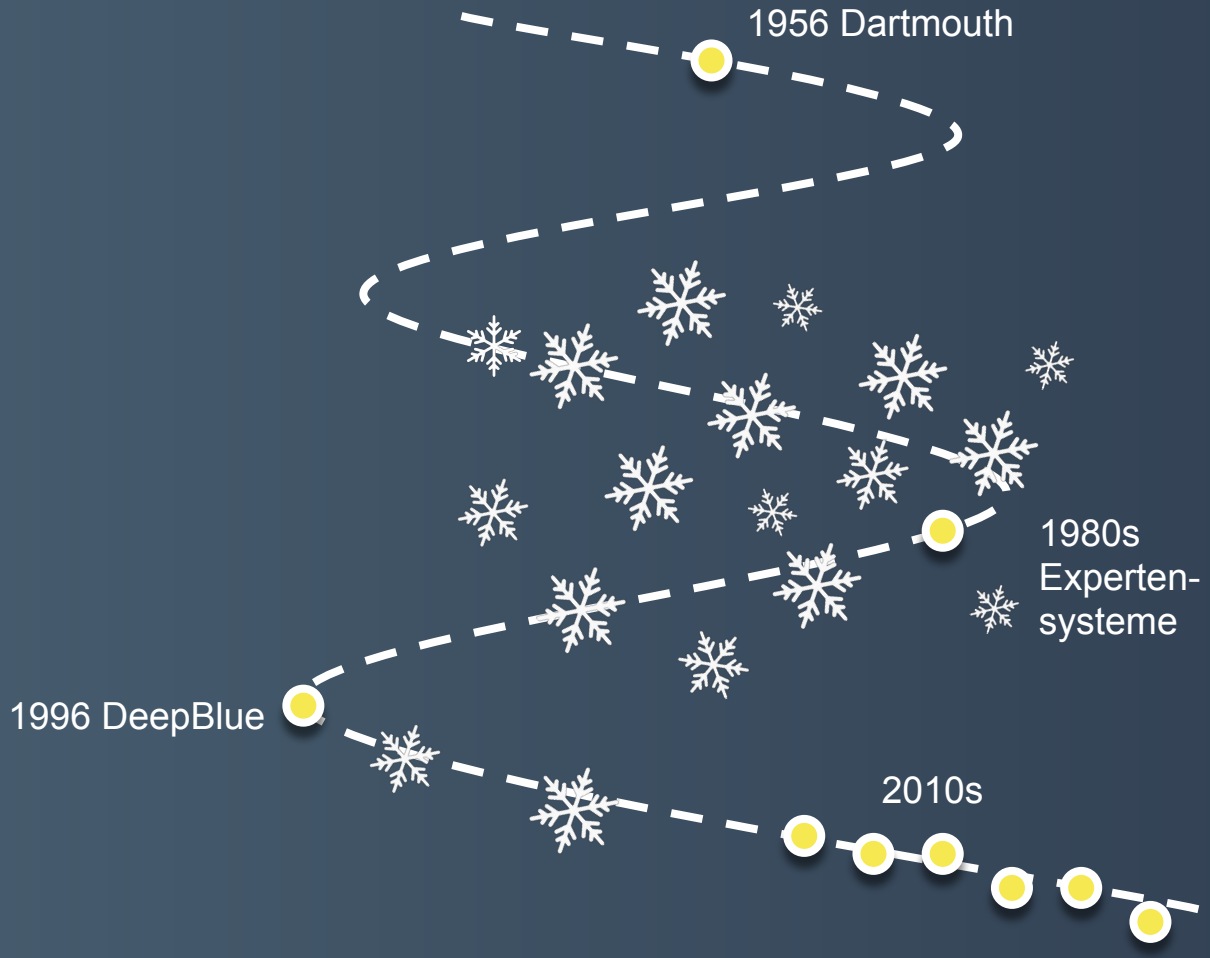
– englische Wikipedia

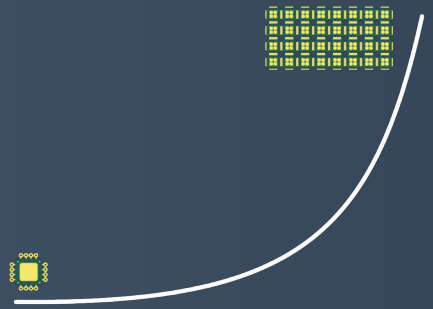
KI ist die Wissenschaft von Maschinen, die einige der Fähigkeiten des menschlichen Gehirns besitzen, wie z.B. die Fähigkeit, Sprache zu verstehen, Bilder zu erkennen, Probleme zu lösen und zu lernen.

– Cambridge Dictionary

KI ist die Wissenschaft, die der Frage nachgeht, wie man Computer dazu bringen kann, Dinge zu tun, die Menschen im Moment noch besser können.

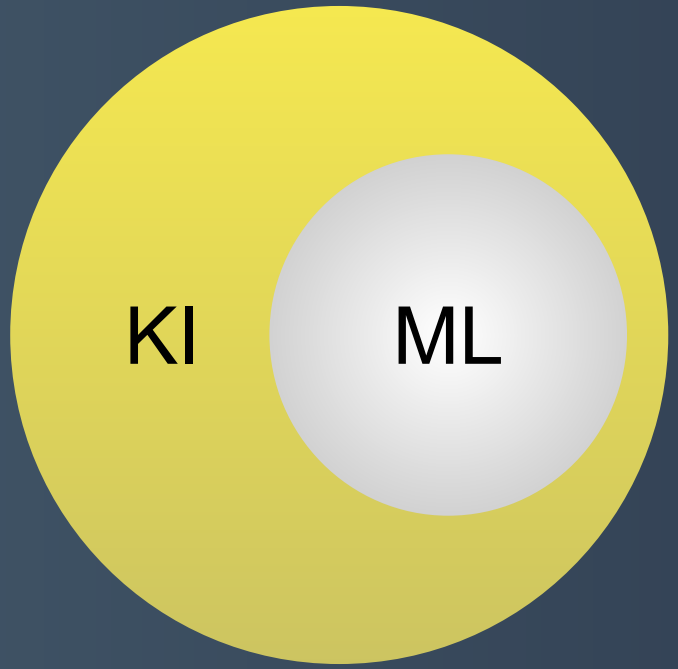
– Elaine Rich & Kevin Knight


1956 Dartmouth
1980s
Experten-
systeme
1996 DeepBlue
2010s

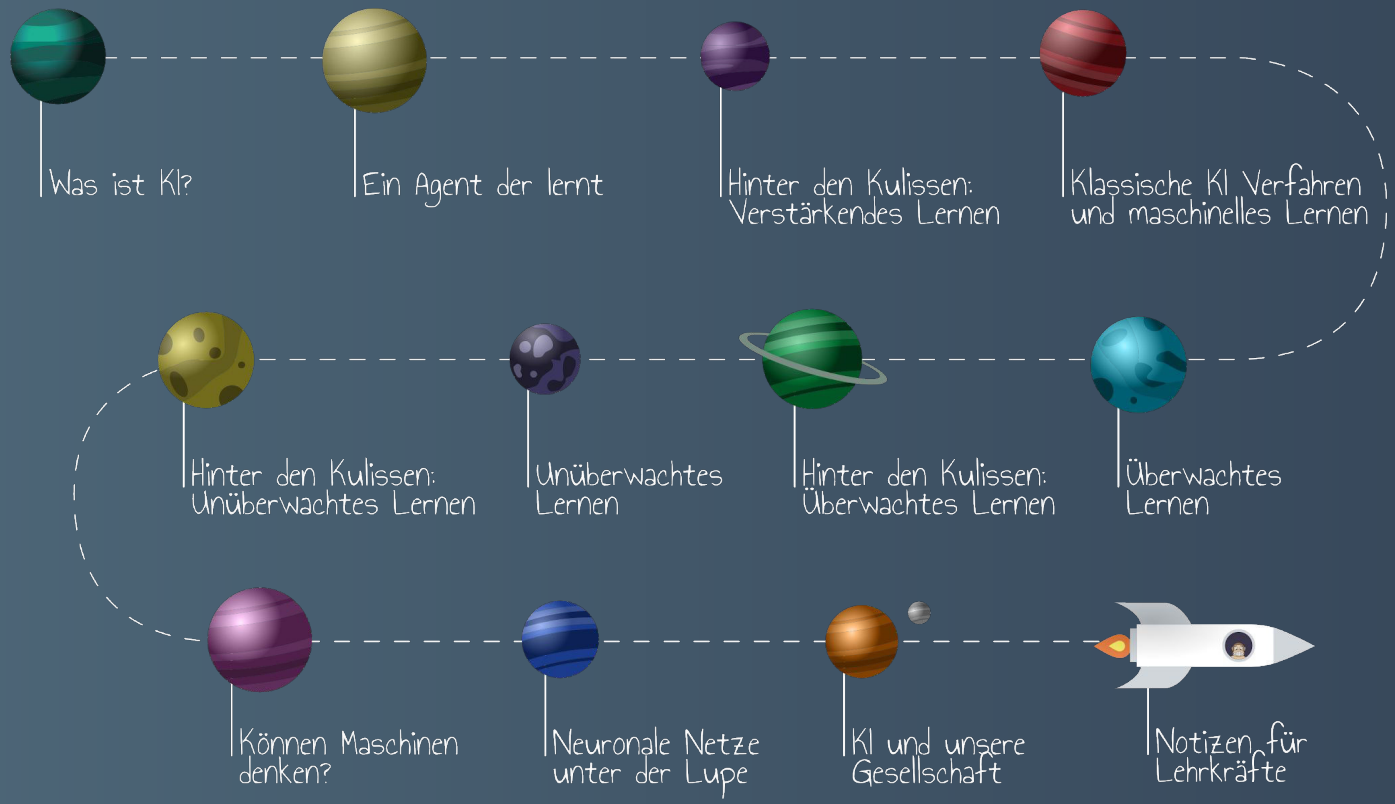


Rechenleistung

Riesige Datenmengen

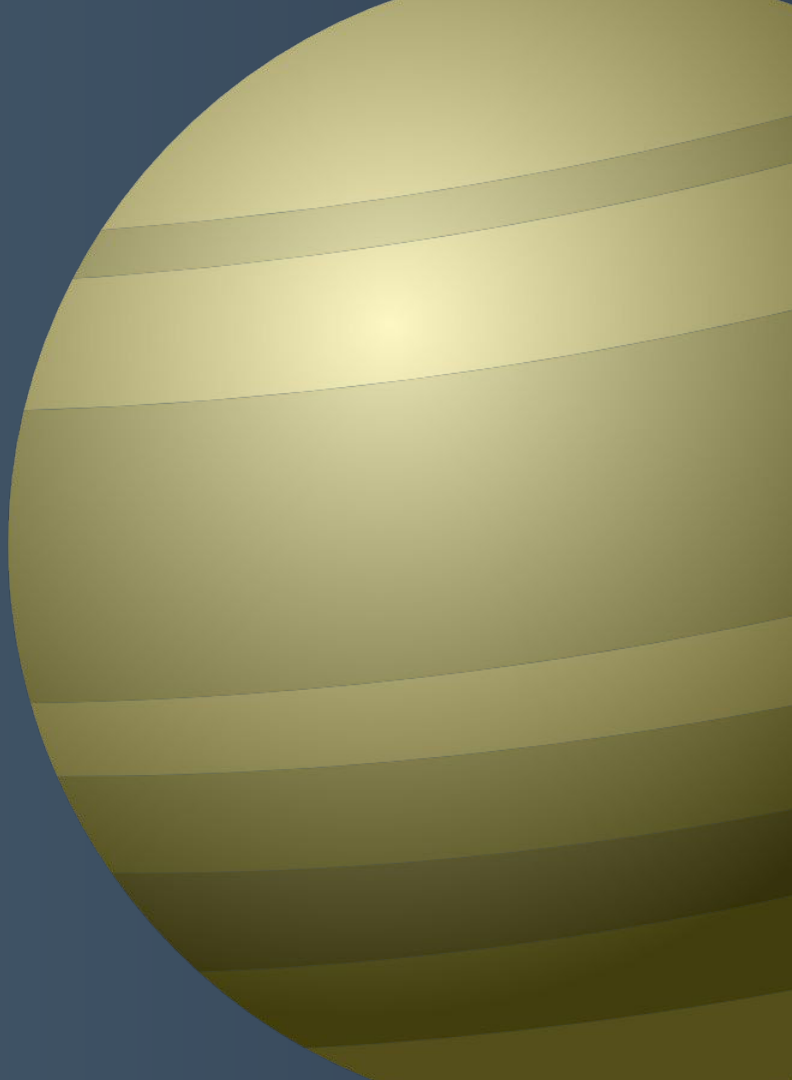

KI
ML

UNSERE **REISE**

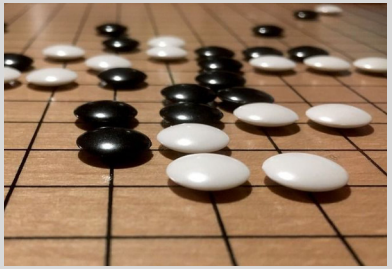


WOCHE 1 EINHEIT 2

EIN AGENT DER LERNT



1996



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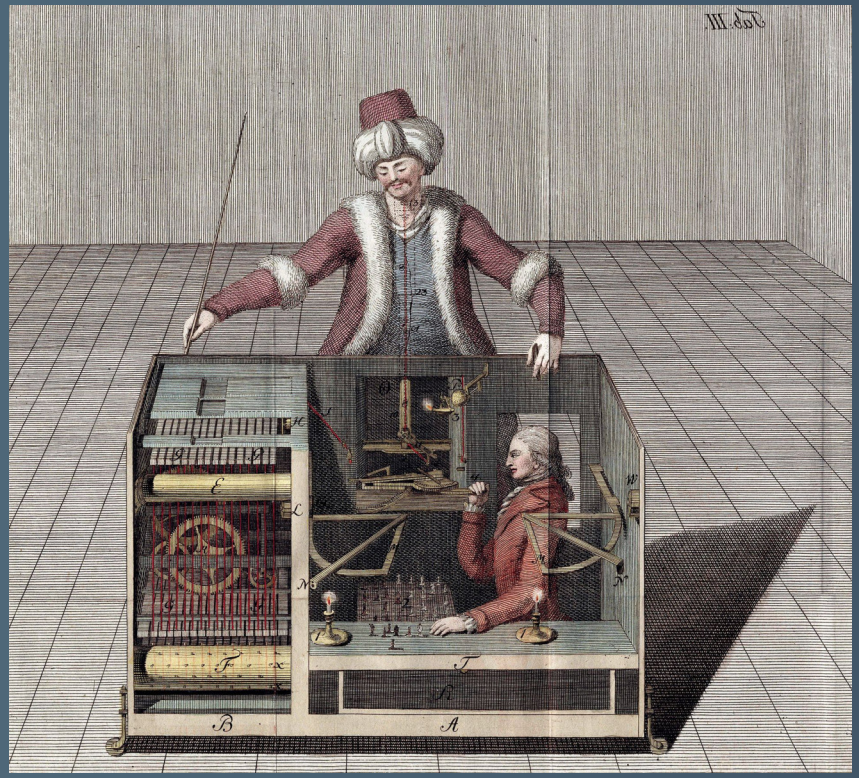
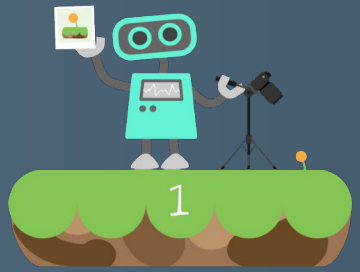

Tab. III.
B
A

Ein Agent ist ein Computerprogramm, das

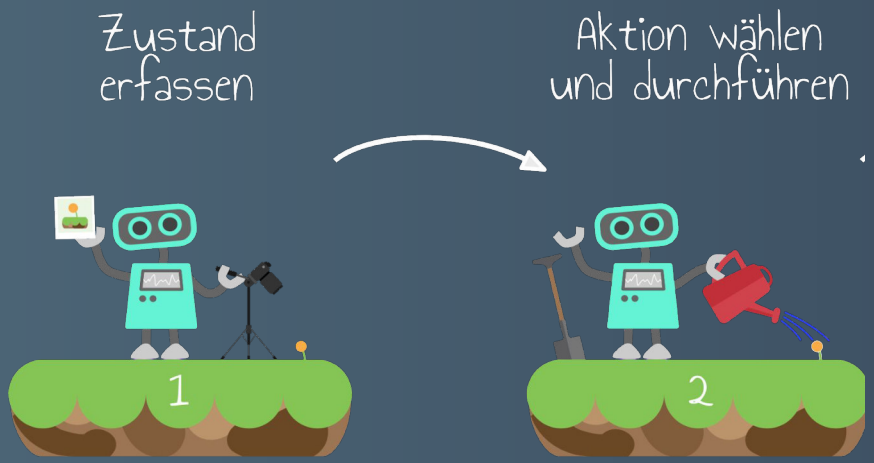
- seine Umwelt wahrnimmt und Aktionen ausführt.
- in der Lage ist, unabhängiges und autonomes Verhalten zu zeigen (bis zu einem gewissen Grad).

Verstärkendes Lernen

Zustand
erfassen

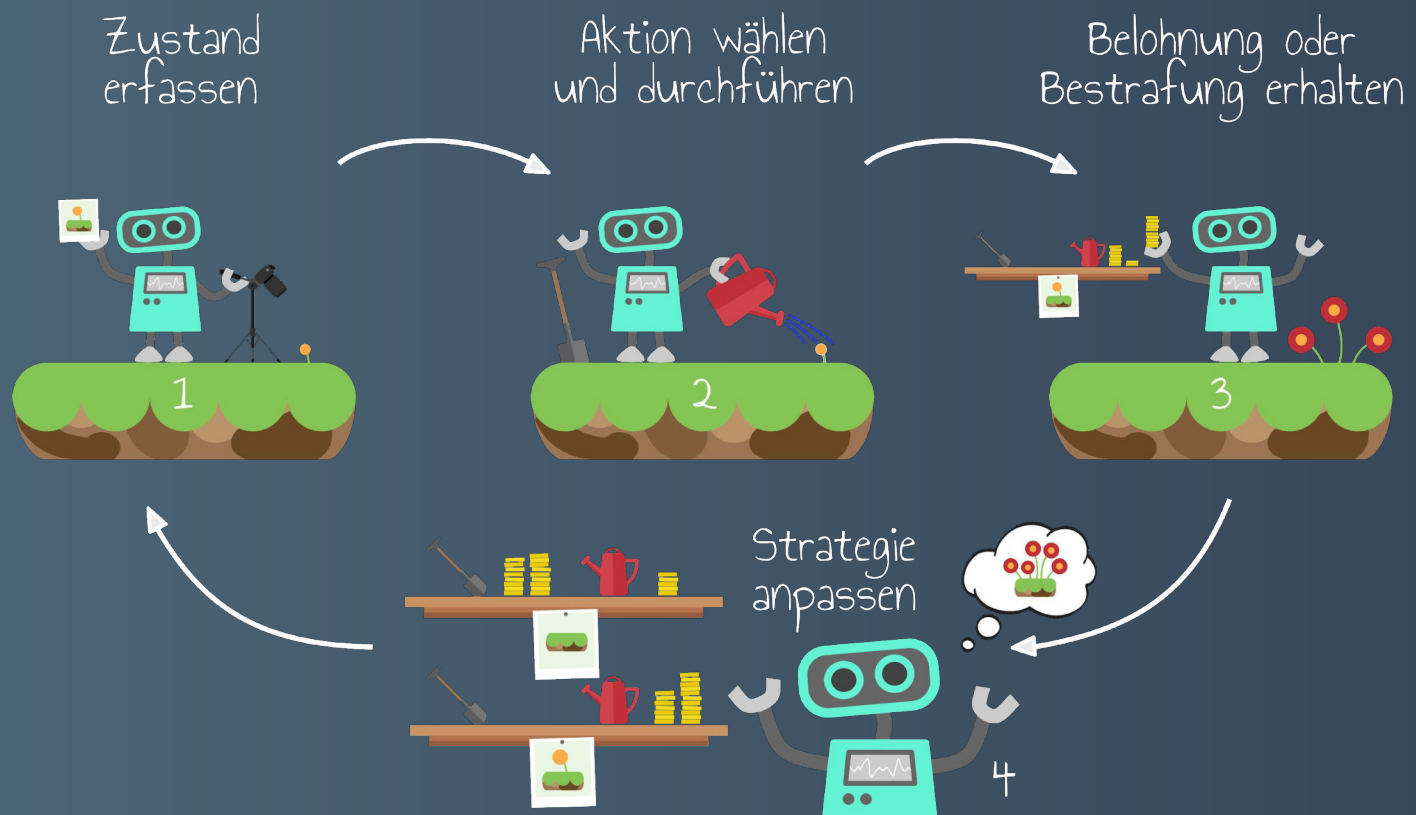


Verstärkendes Lernen



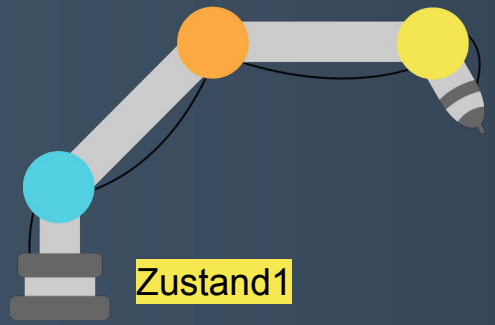
Verstärkendes Lernen

Verstärkendes Lernen

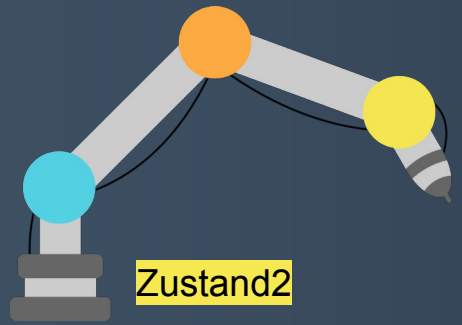


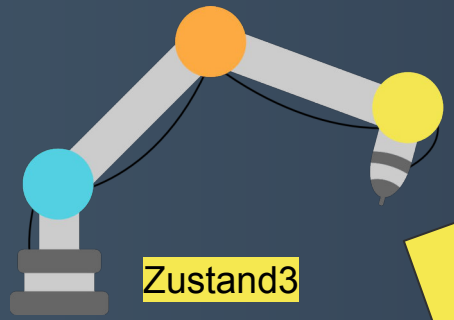
KUKA
KUKA

bewege Motor ● um 42°



bewege Motor ● um -34°

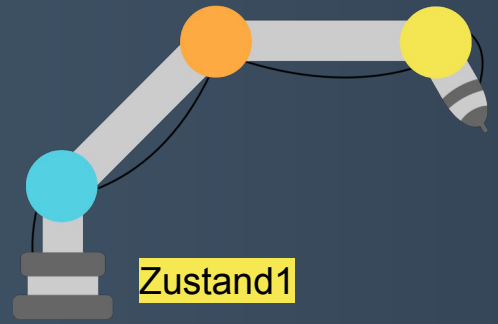


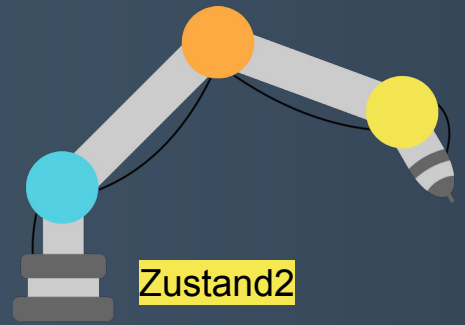


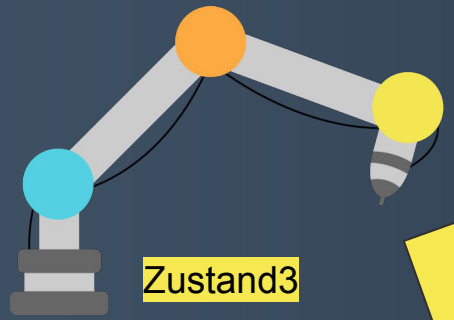
ERFOLG

bewege Motor um 42°

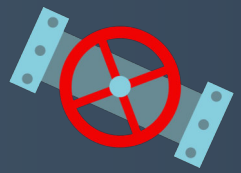
bewege Motor um -34°

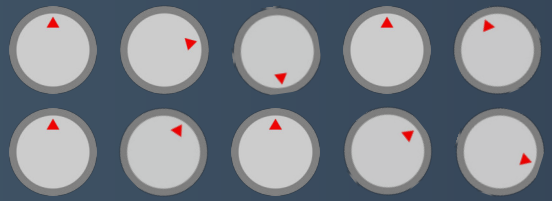


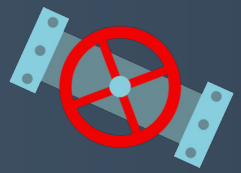


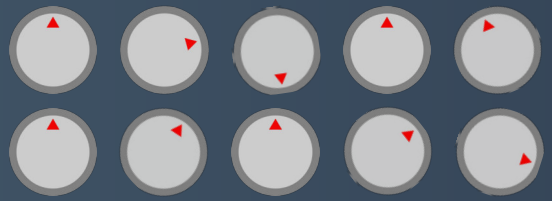


ERFOLG





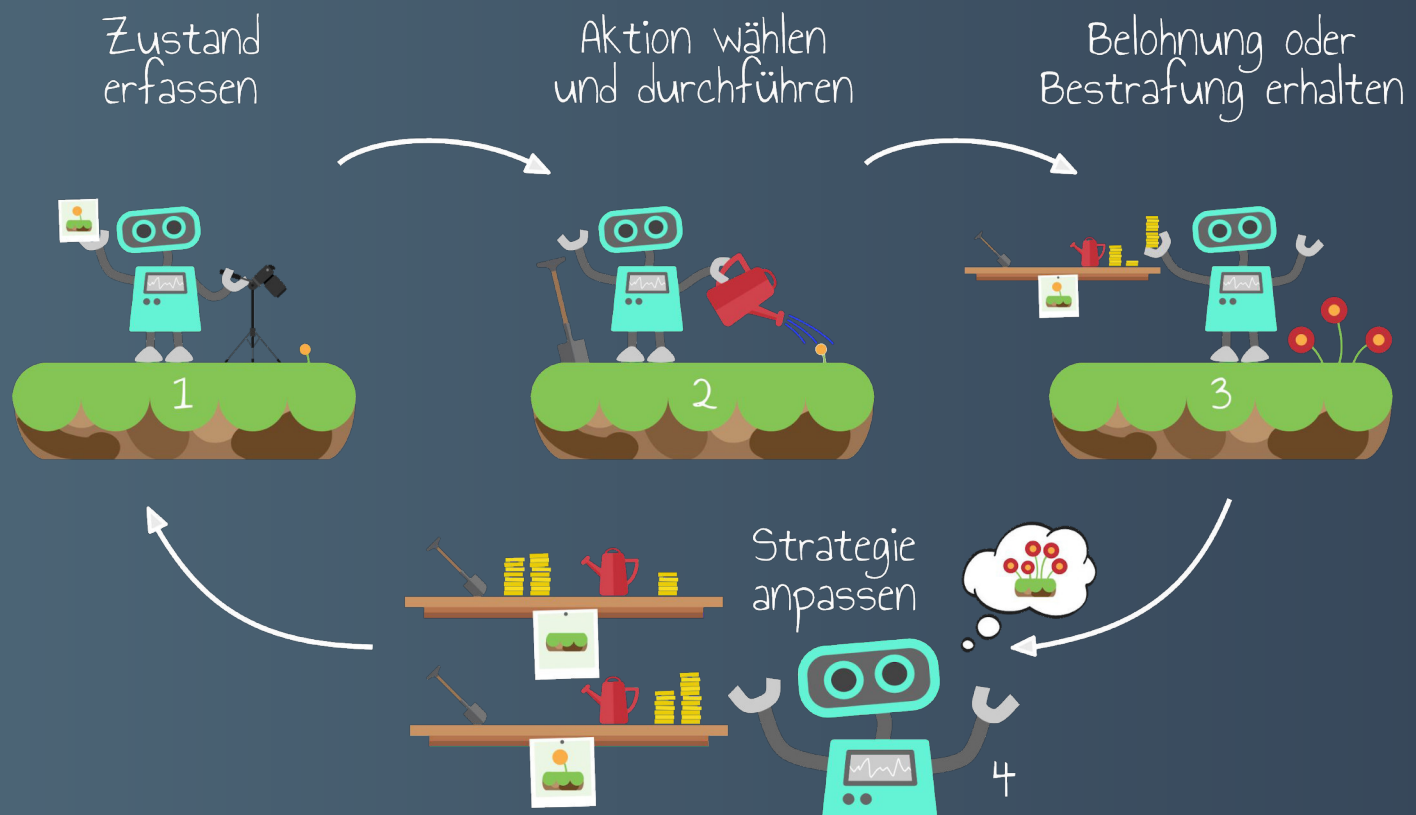




WOCHE 1 EINHEIT 3

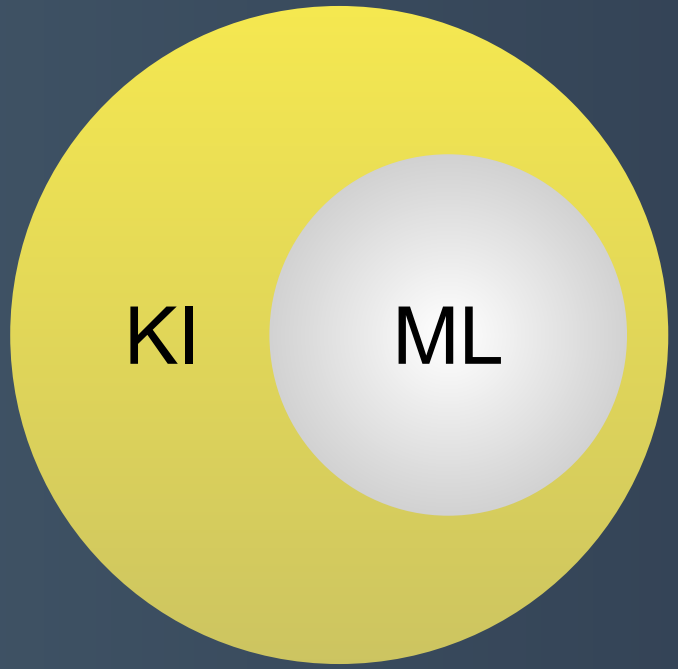
HINTER DEN KULISSEN: VERSTÄRKENDES LERNEN

Verstärkendes Lernen

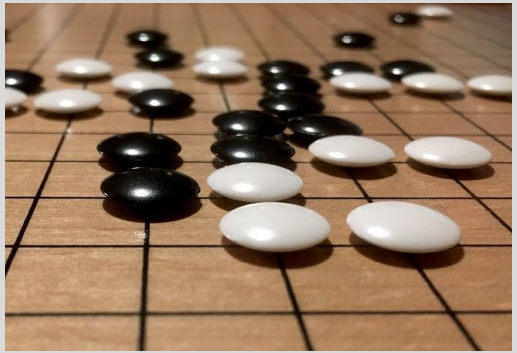


WOCHE 1 EINHEIT 4

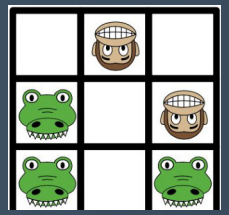
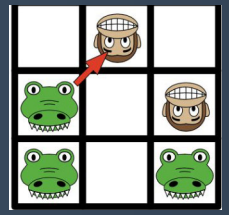
KLASSISCHE KI VERFAHREN UND MASCHINELLES LERNEN

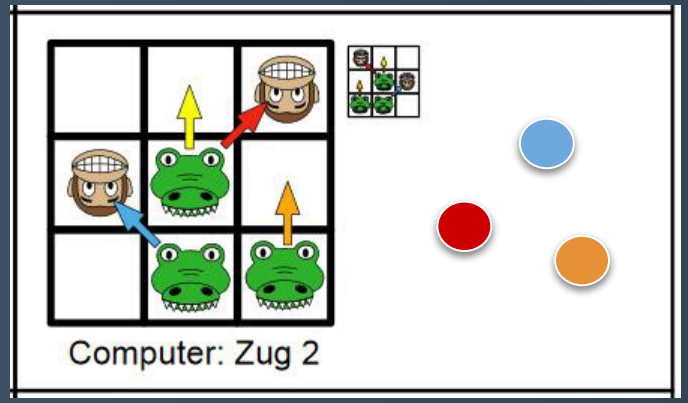

KI
ML

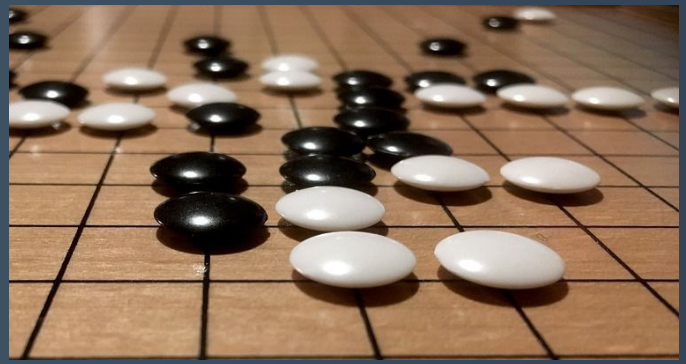
1996



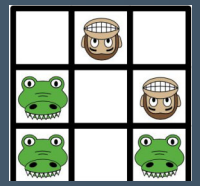
2016

wenn  dann 





Komplexität



Größe des Spielbretts	3x3	8x8	19x19
Möglichkeiten pro Zug (Ø)	4	35	200-300
Länge des Spiels	3	60	200
Mögliche Spielstellungen	<10^2	10^44	10^170

Kombinatorische Explosion:

35	1. Zug	200
1225	2. Zug	40 000
42 875	3. Zug	8 000 000
1 500 625	4. Zug	1 600 000 000

Superhelden-Pille

enthält

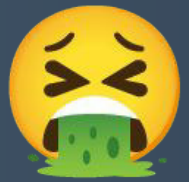
Zaubermedizin

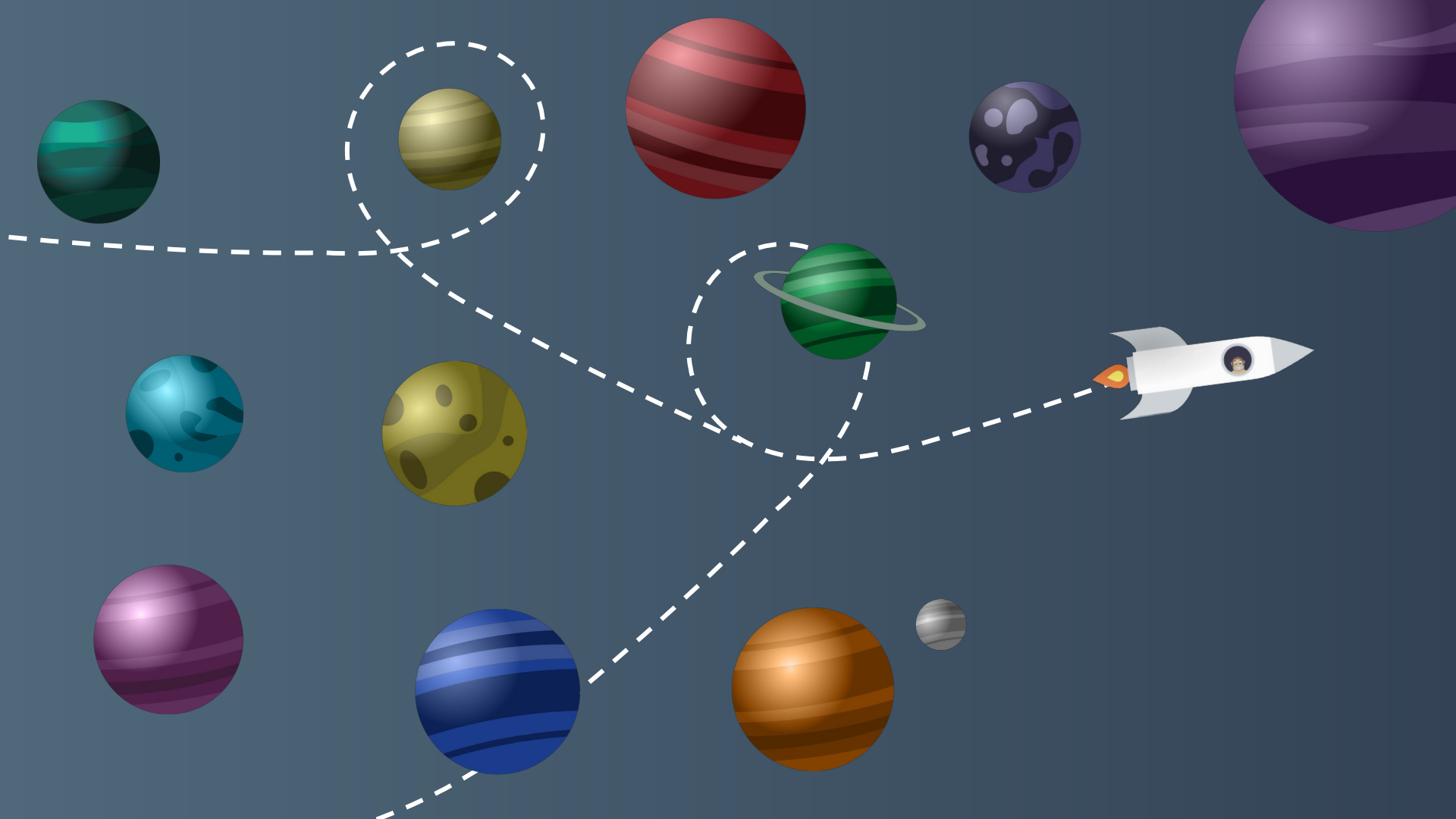
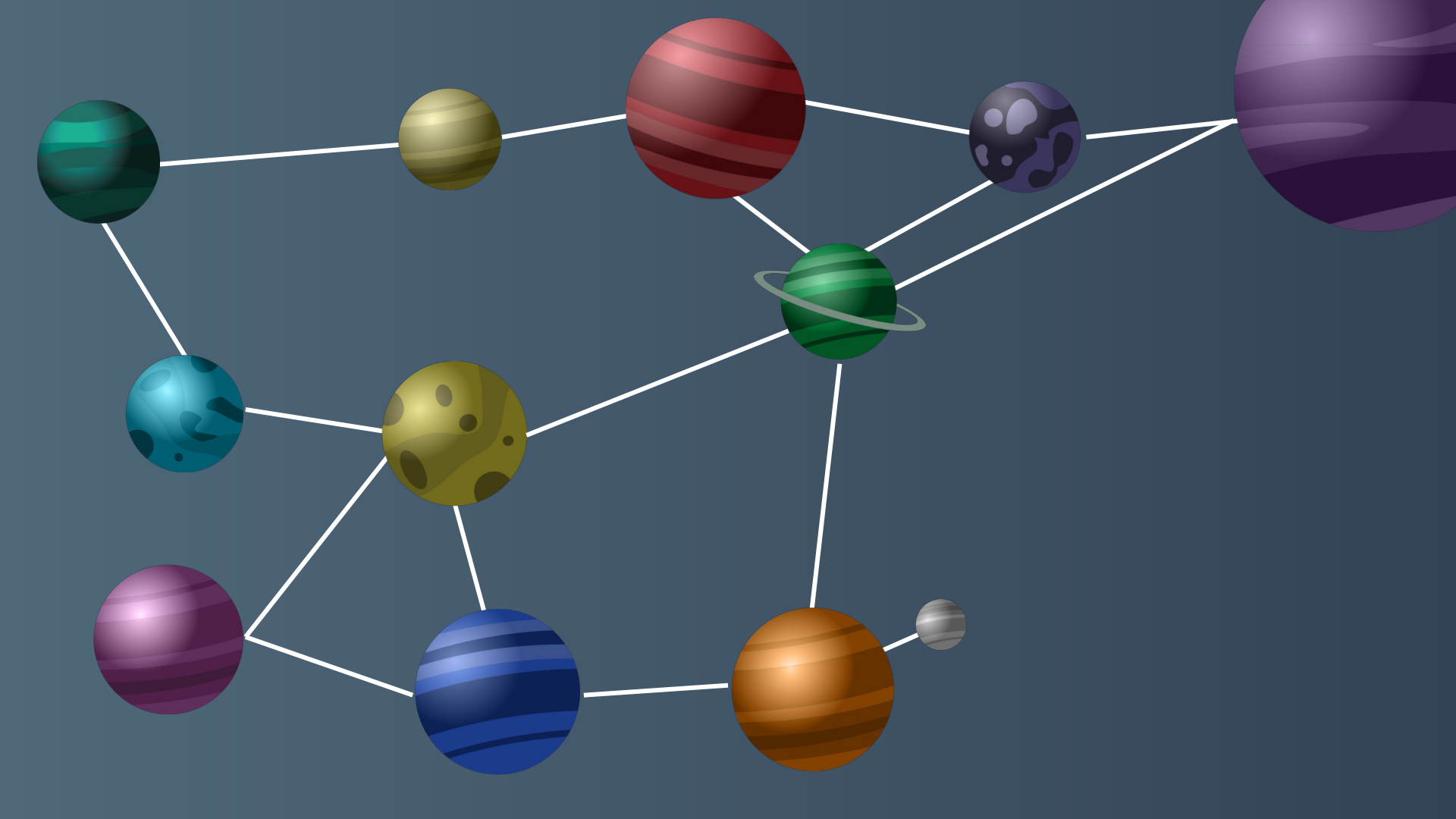
enthält

Wunderelixier

enthält

WENN UND

DANN 

Superhelden-Pille

enthält