

Was ist Künstliche Intelligenz?

Dr. Stefan Hackstein

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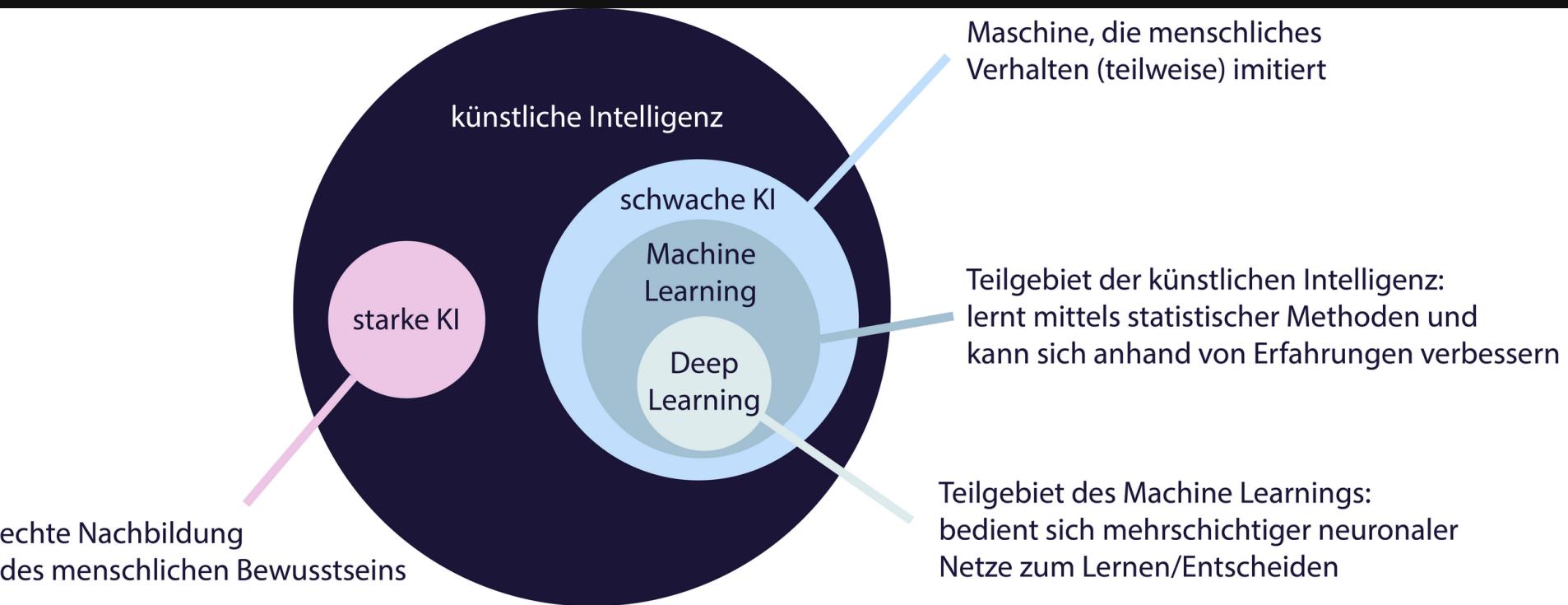
verlorene Wanderergruppe
ohne Sicht, Kompass, Karte
Ziel: das richtige Tal



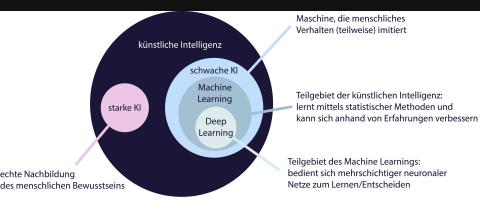
DALL-E

Was ist Künstliche Intelligenz?

Computer erledigt komplexe Aufgaben



Was ist Künstliche Intelligenz?



Computer erledigt komplexe Aufgaben

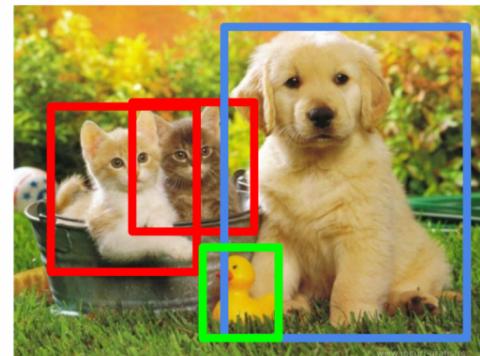
Classification



Classification + Localization



Object Detection



Instance Segmentation



CAT

CAT

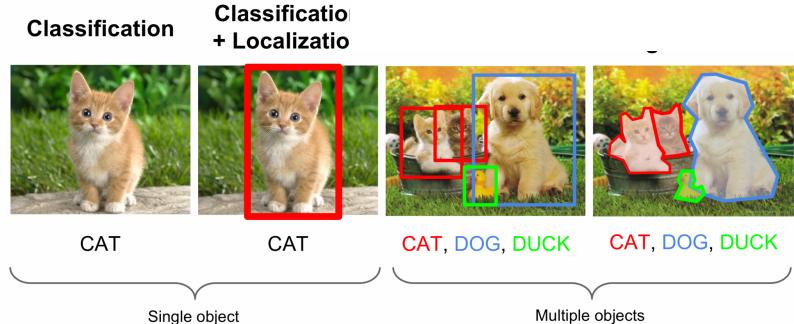
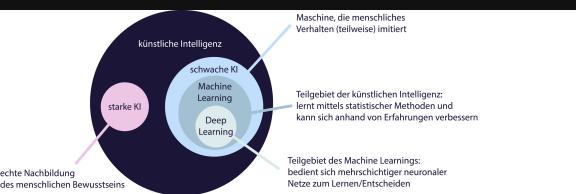
CAT, DOG, DUCK

CAT, DOG, DUCK

Single object

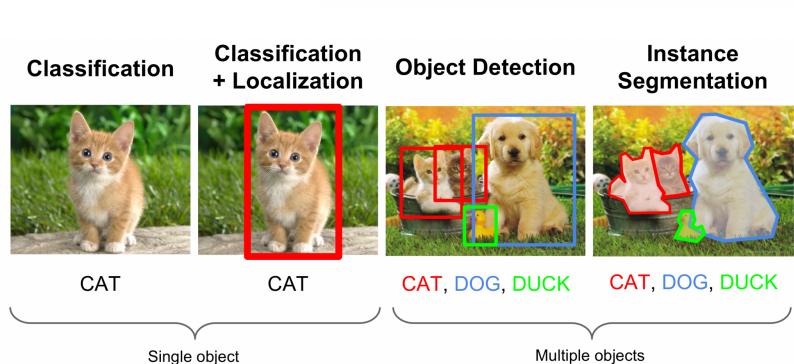
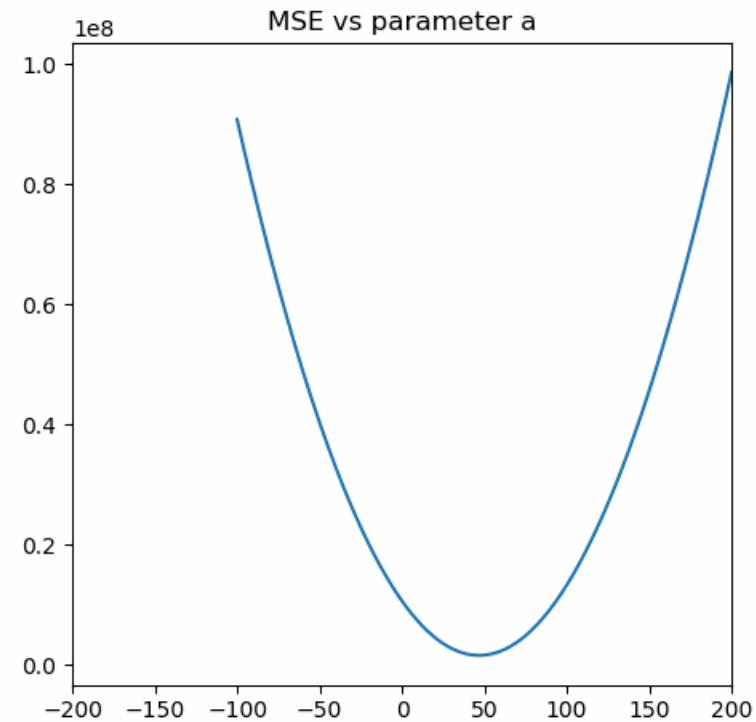
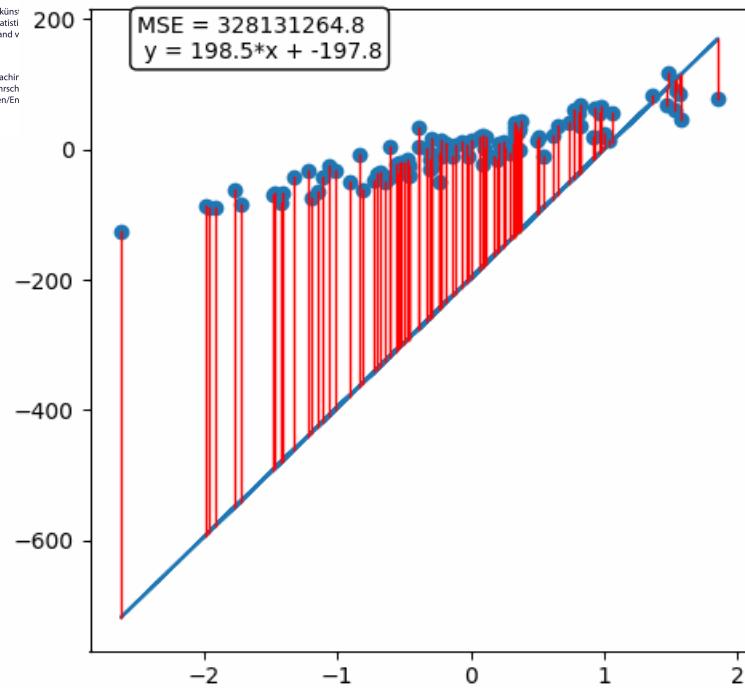
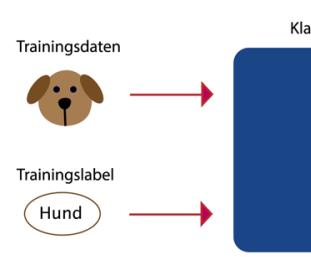
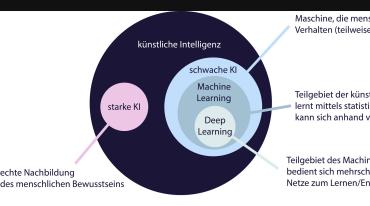
Multiple objects

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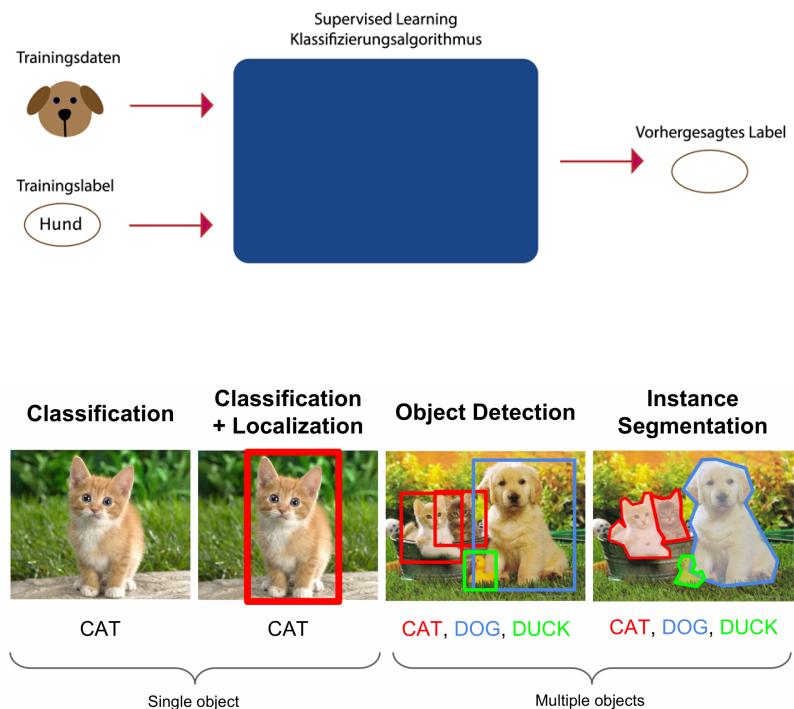
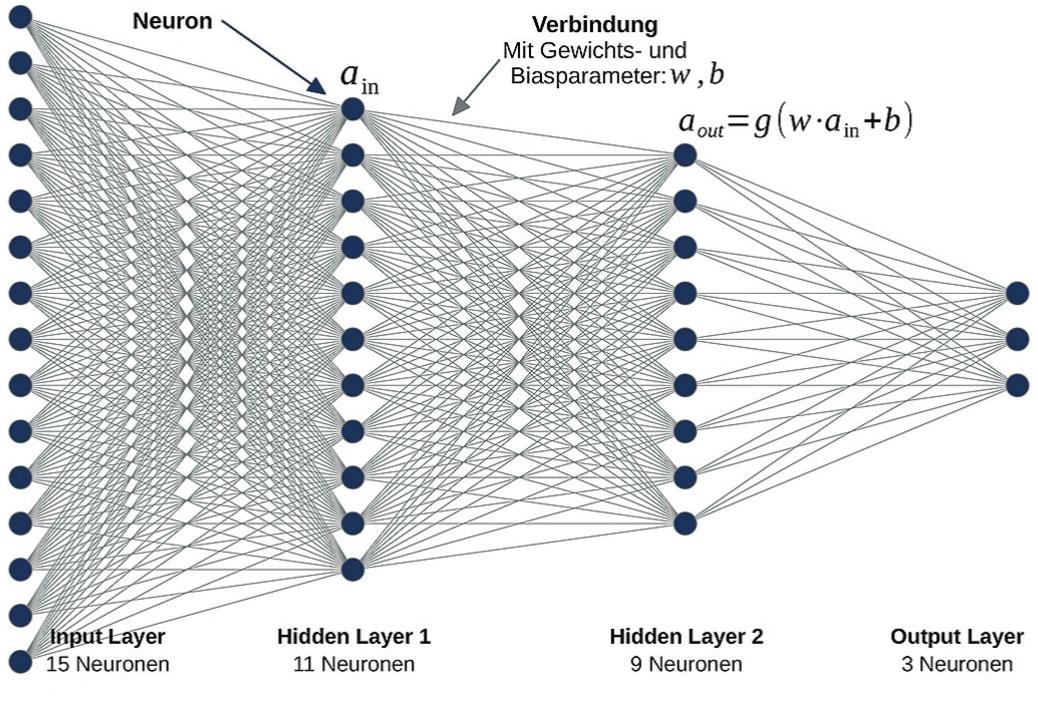
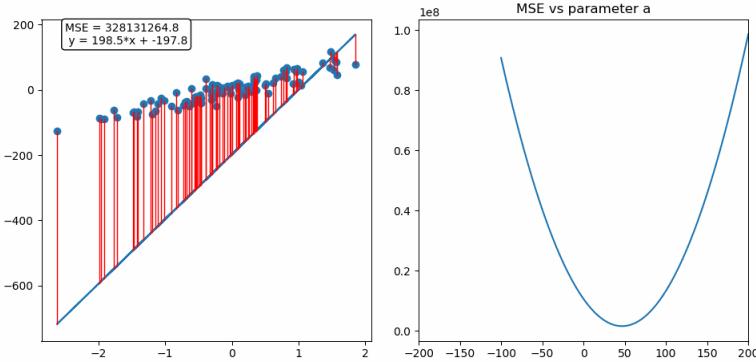
Gewünschtes Verhalten
wird trainiert

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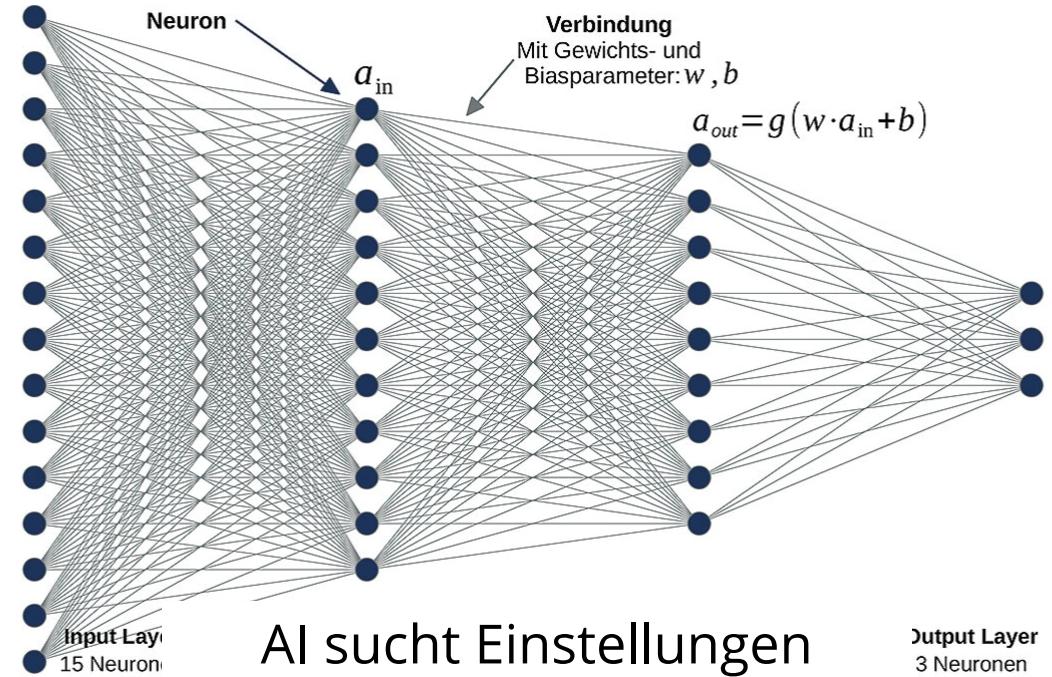
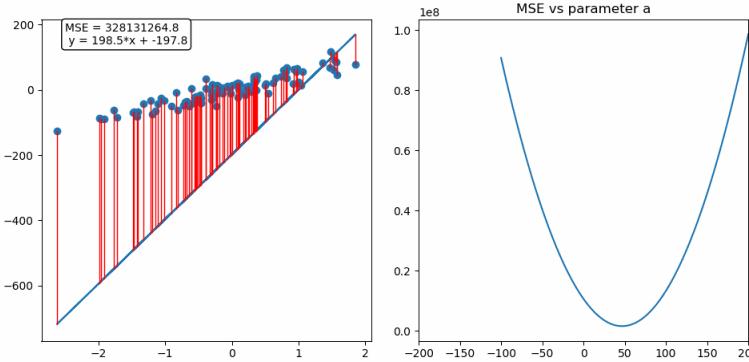
Suche nach
Tal der kleinsten Fehler

Was ist Künstliche Intelligenz?



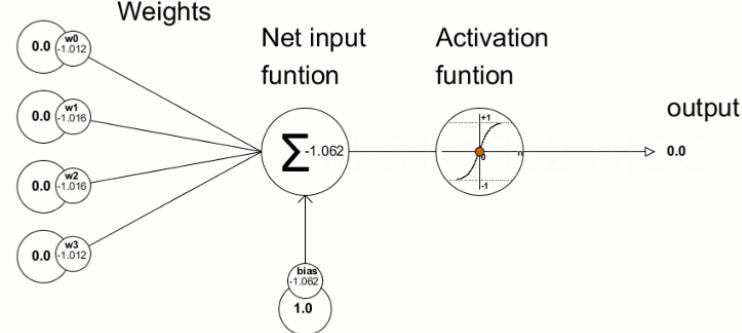
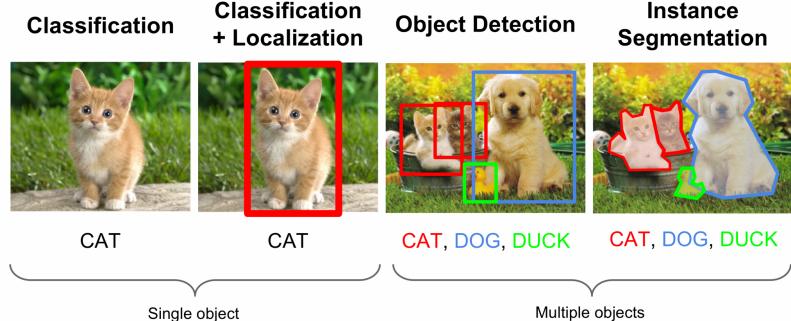
Neuronales Netz
Kompliziertes Netz einfacher Rechnungen

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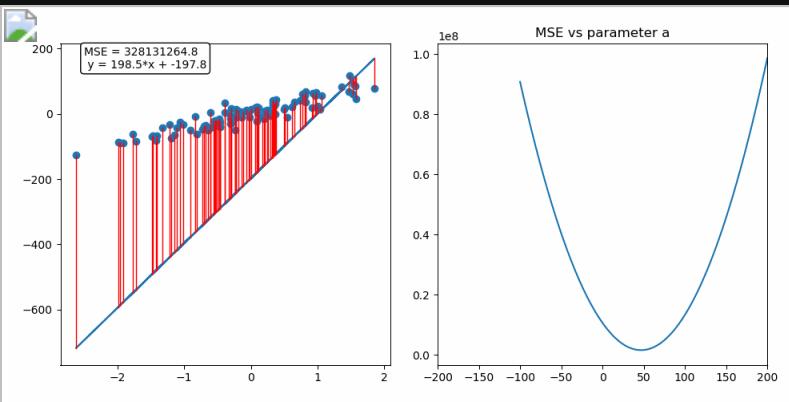


AI sucht Einstellungen

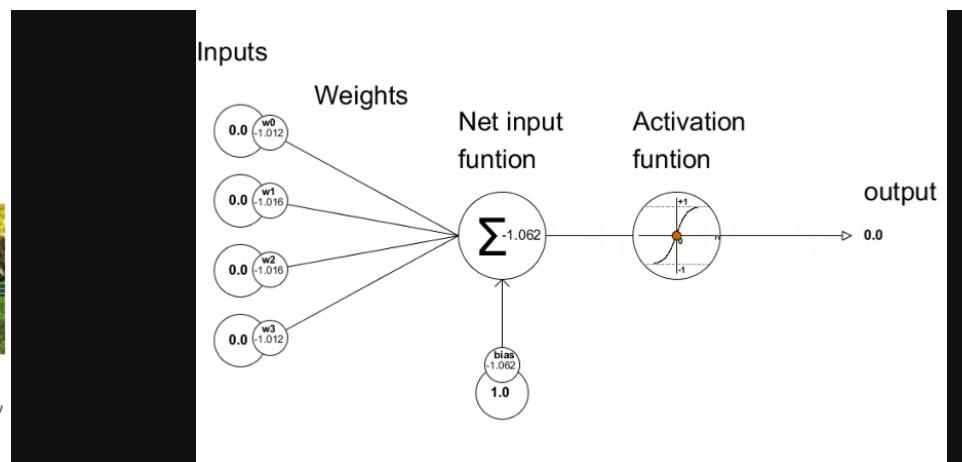
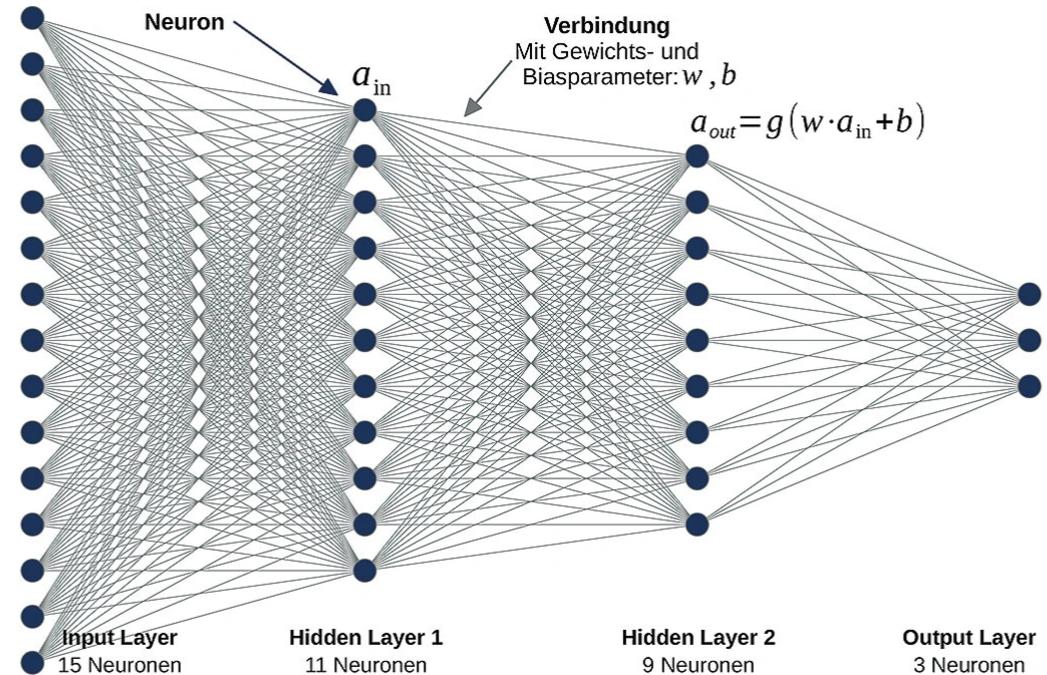
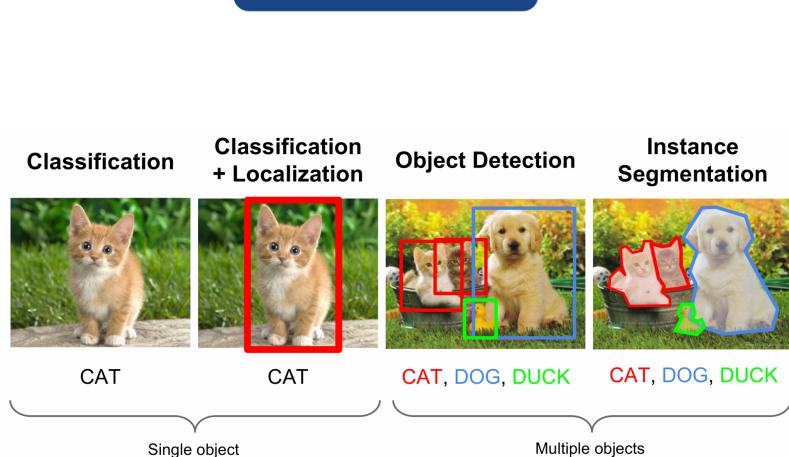
mit kleinstem Fehler



Was ist Künstliche Intelligenz?



Finde Tal in Hügellandschaft
mit Millionen Dimensionen



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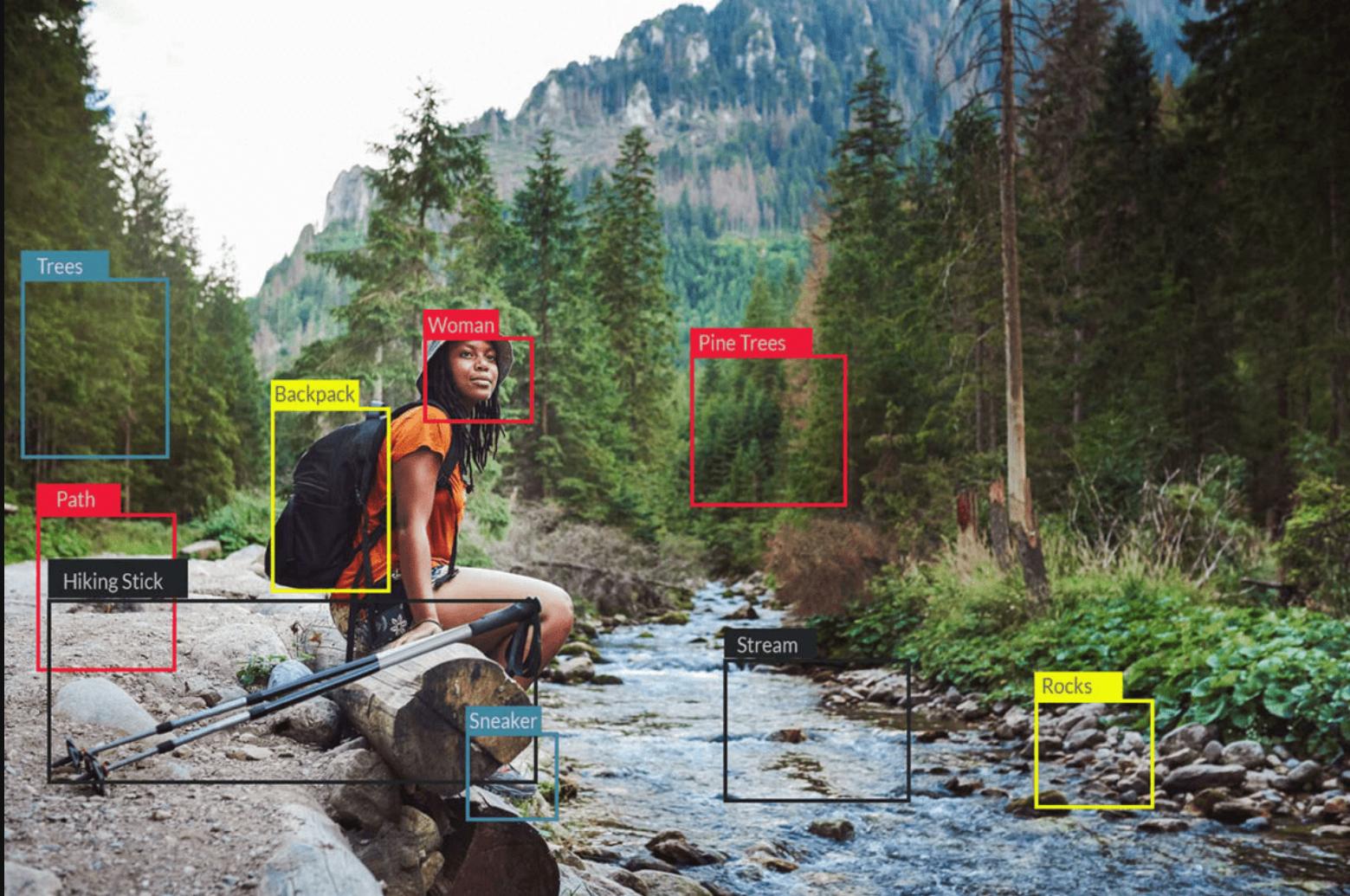
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Was kann KI?

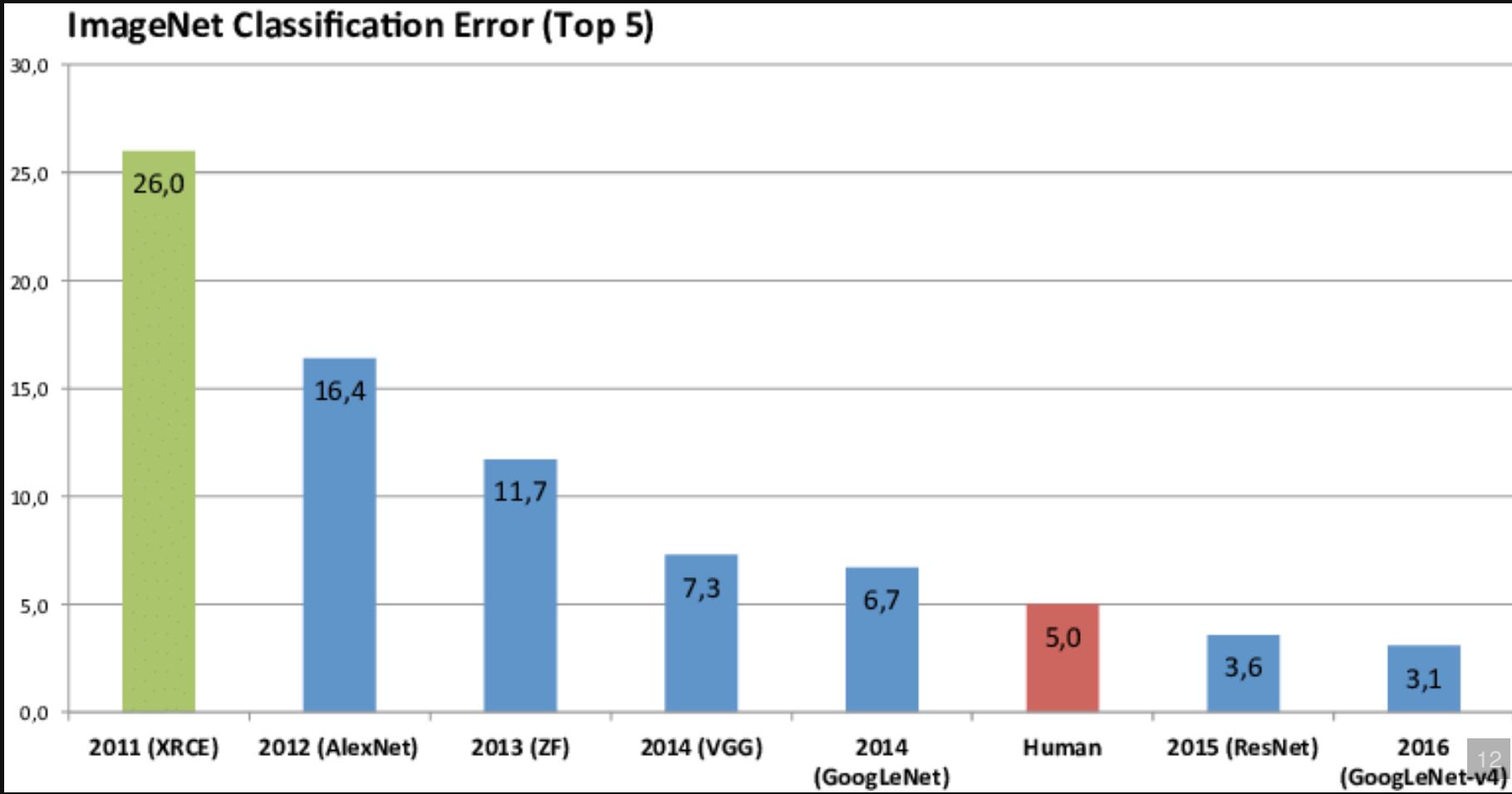
Bilder erkennen



Was kann KI?

Bilder erkennen

Seit 2015 Besser als der Mensch!



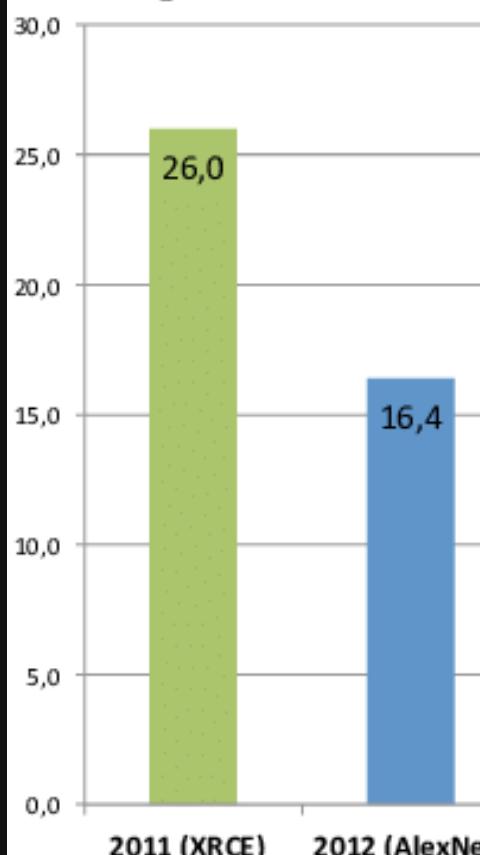
Was kann KI?

Bilder erkennen

Seit 2015 Besser als der Mensch!



ImageNet Classification



Select all images with street numbers.

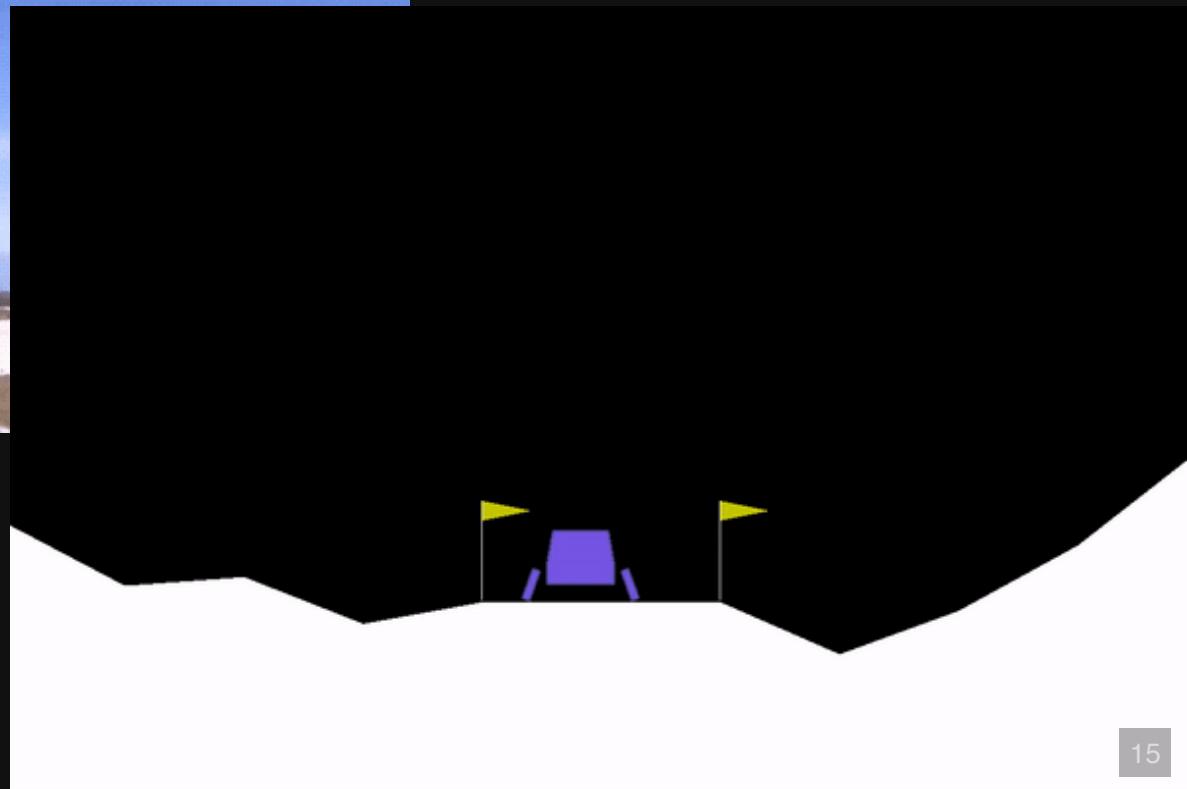
Click verify once there are none left.



Was kann KI?



Was kann KI?

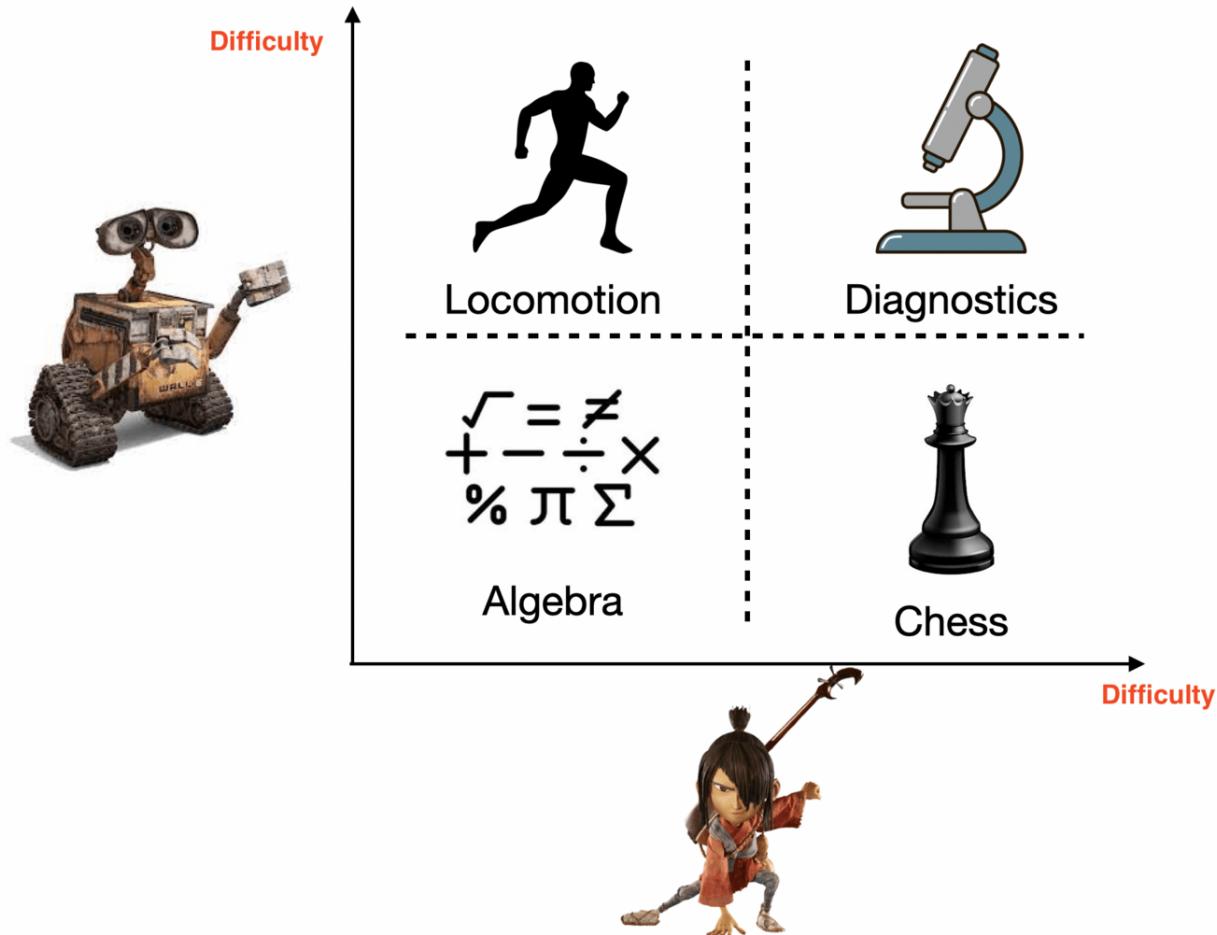


Was kann KI?

- klar definierte, repetitive Aufgaben lösen
- optimieren
- Muster erkennen
- Zusammenfassen

Was kann KI?

“... it is comparatively easy to make computers exhibit adult level performance on intelligence tests or playing checkers ...”



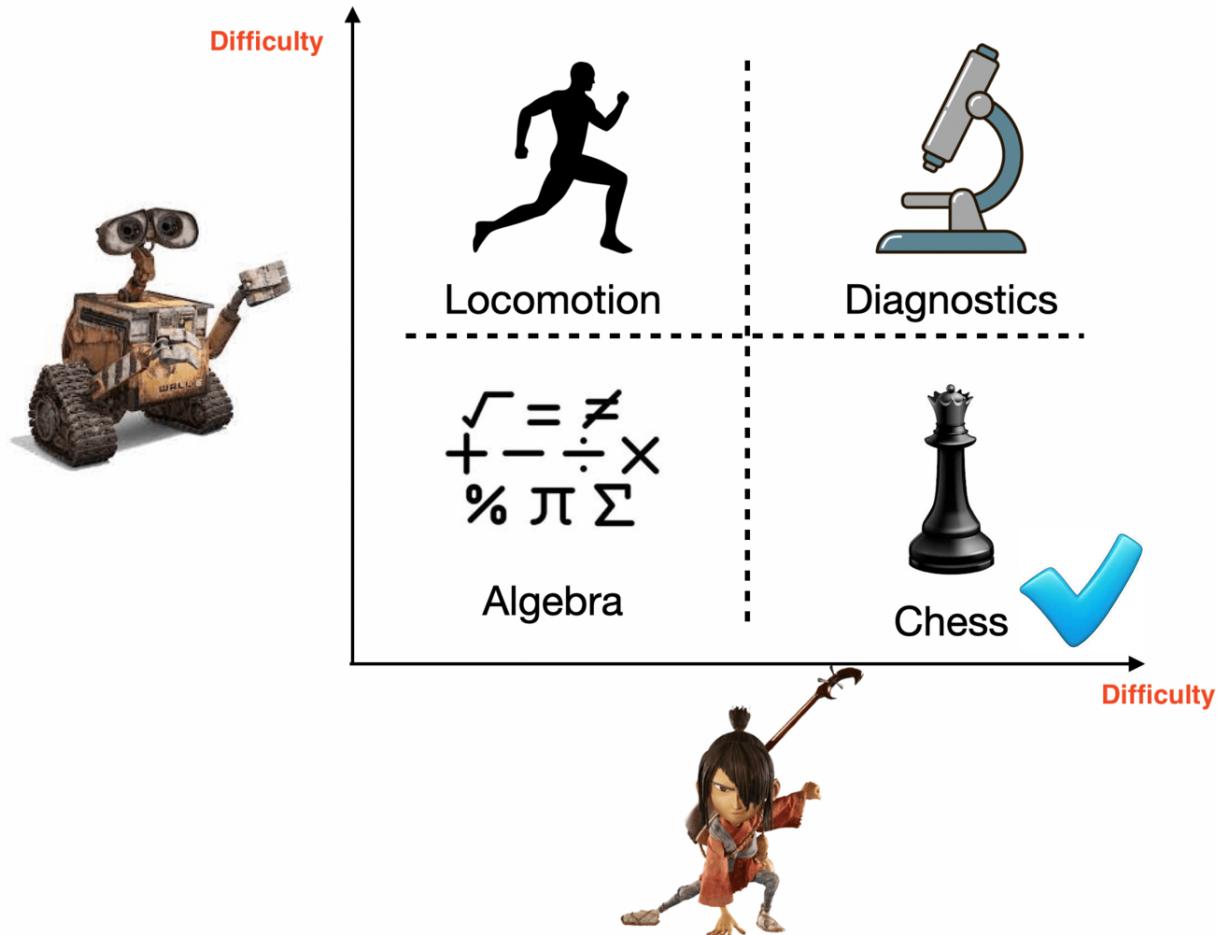
“...and difficult or impossible to give them the skills of a one-year-old when it comes to perception and mobility”

- Hans Moravec, 1988

gauthamvasan.github.io/

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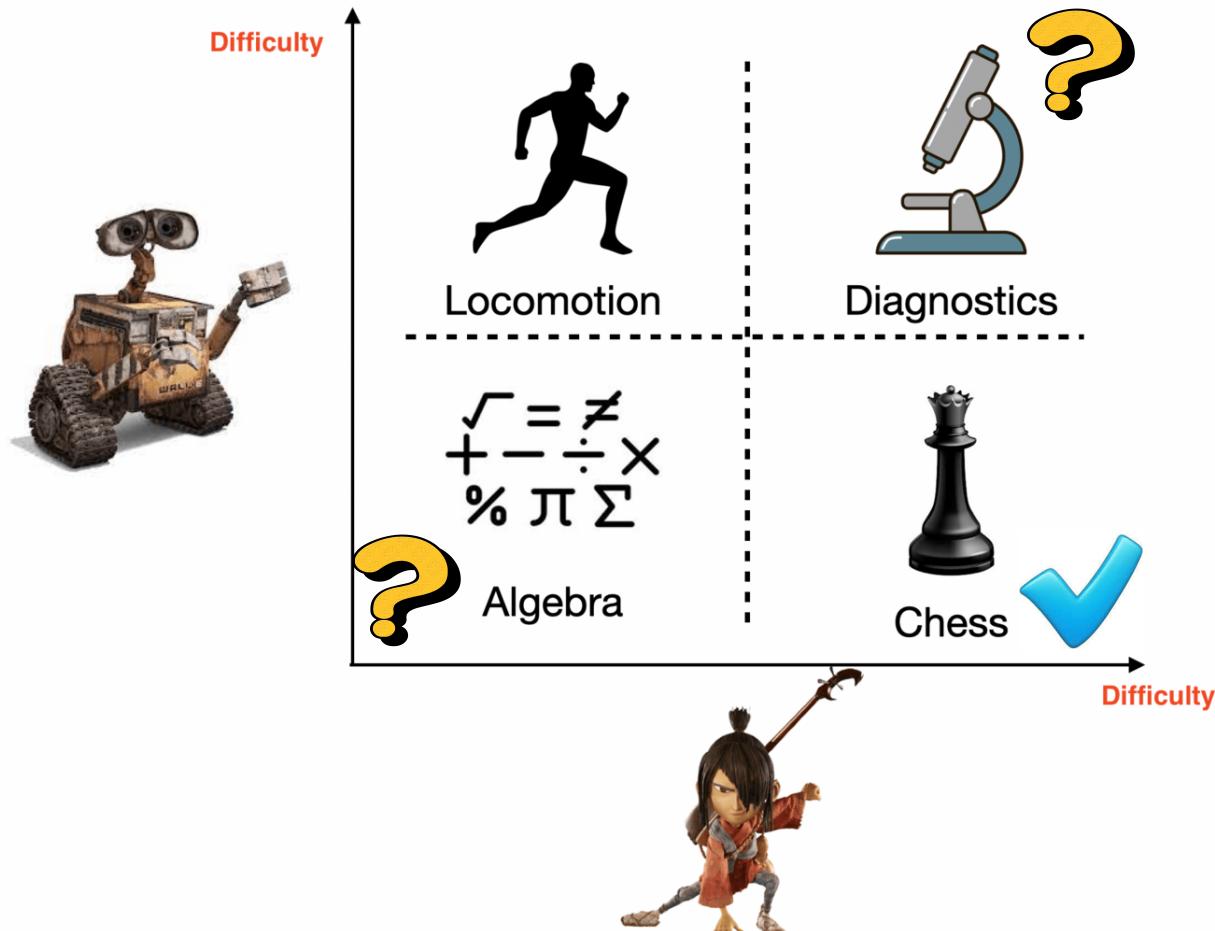
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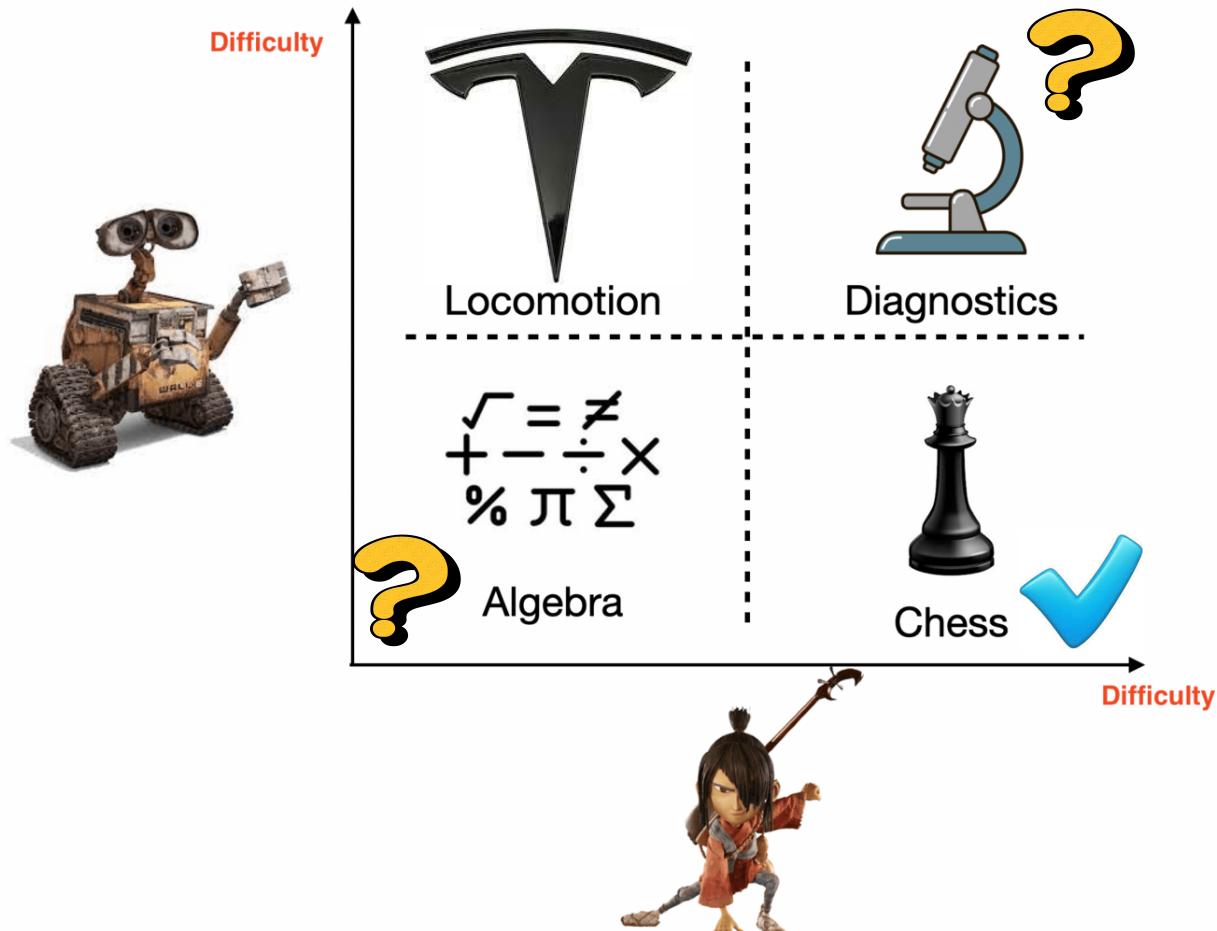
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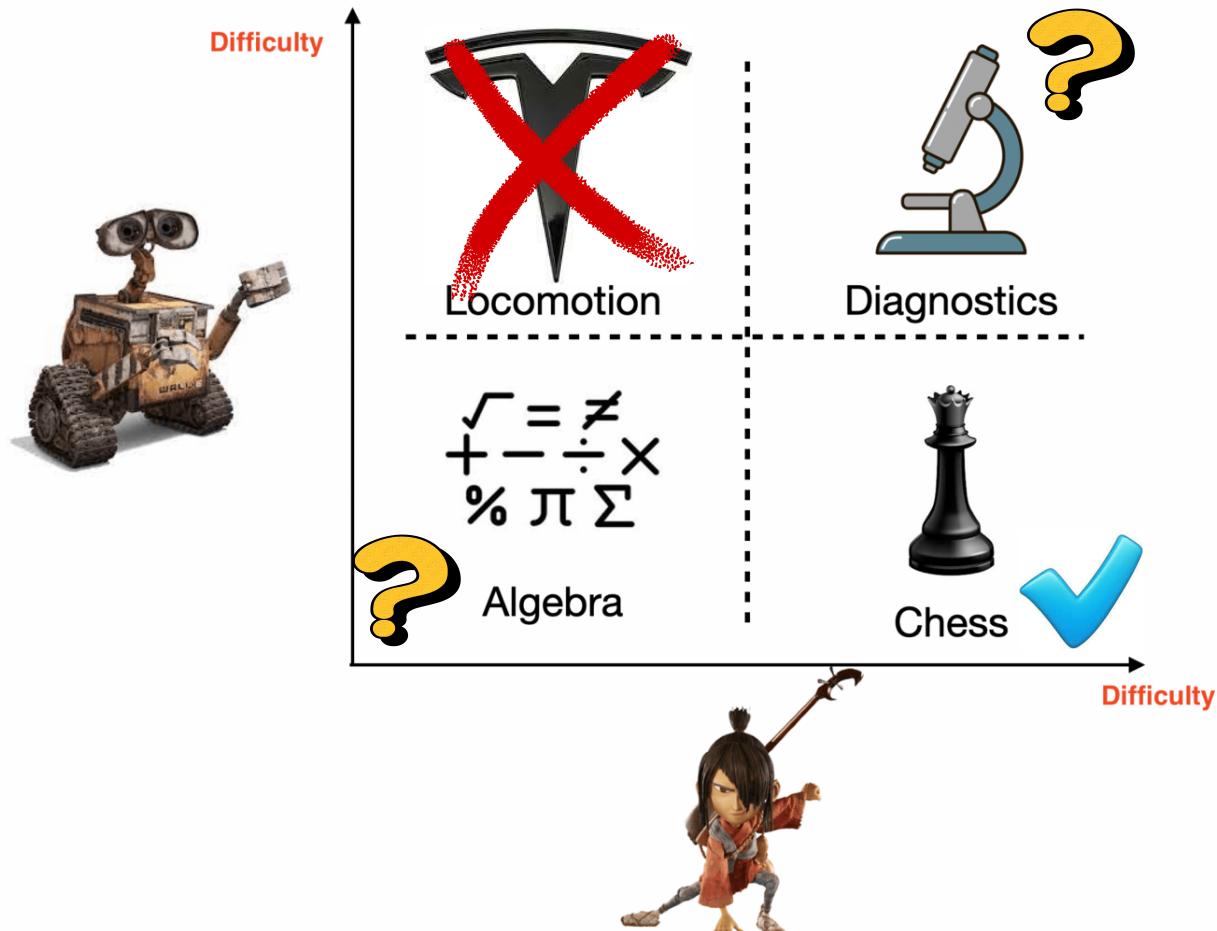
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Was ist Künstliche Intelligenz?

- **Beschränkter Assistent**
- **Stärke:** Daten Schnell Auswerten
- **Schwäche:** Auf eine einzige Aufgabe spezialisiert
- **Hilfreich:** klar definierte, repetitive Aufgaben
- **Schädlich:** Entscheidungsprozesse auslagern
- **Guter Umgang:** einfache, aufwendige Aufgaben delegieren,
wenn Qualität leicht zu prüfen ist
- **selbst Denken**