AI + AI + AI

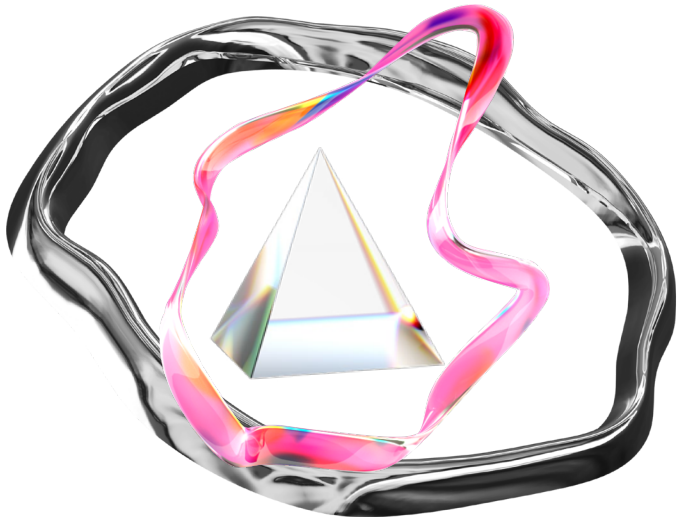
AI MODULE X SCREENS

enrique.encinas @aho.no

AIAIAINEWS

3 WEEKS

13th March -> 31st March



HTTPS://GITHUB.COM/ENRIQUEKI/AIAIAI

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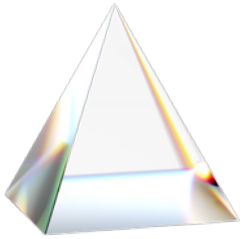
SLACK

WEEK #1

13th March -> 20th March



AI X LAST WEEK

:: P5.JS + AI BASICS

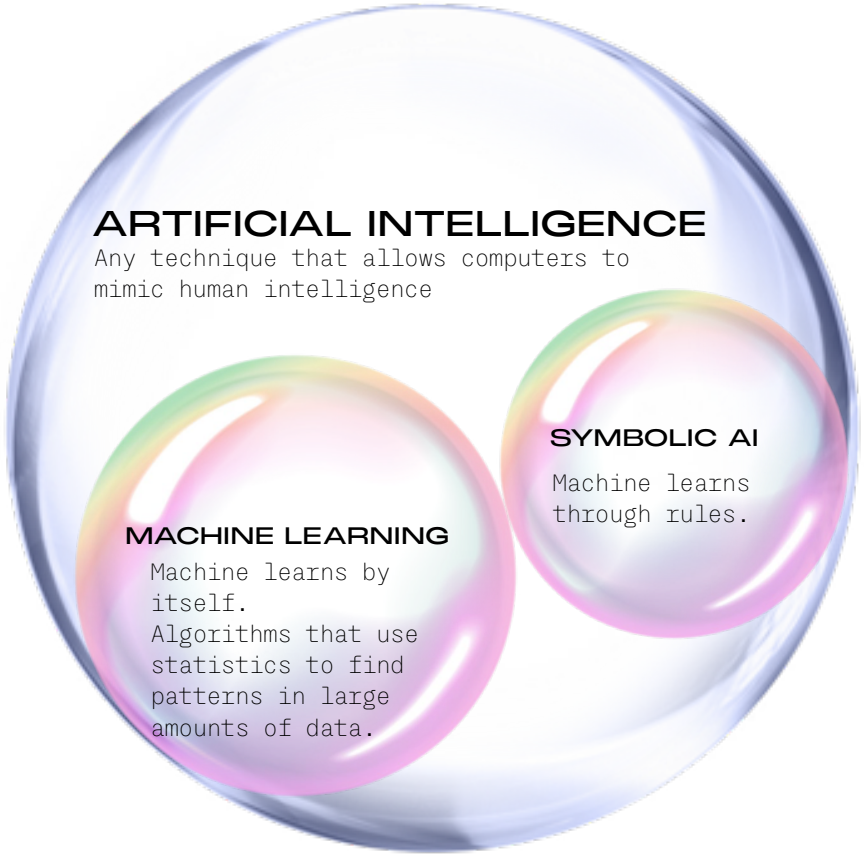

AI BASICS

WWW.AUTODRAW.COM

+

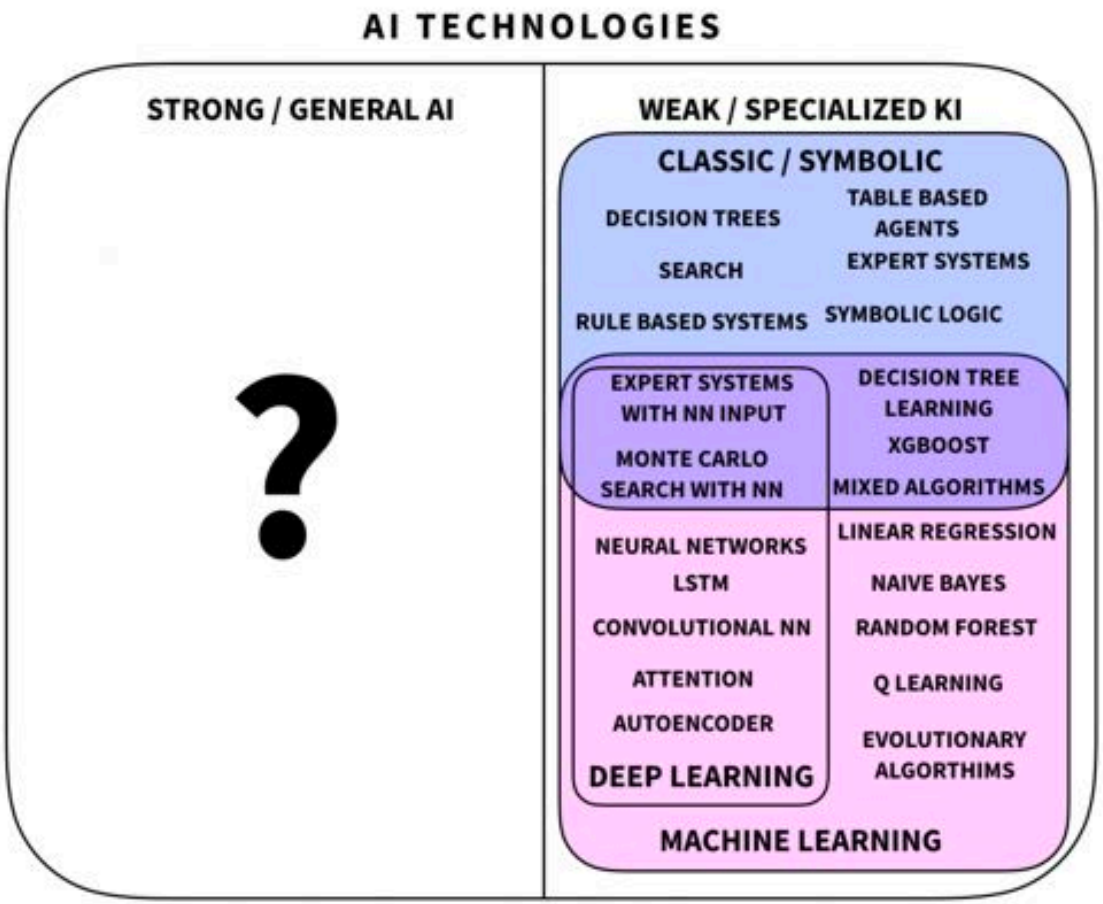
WWW.QUICKDRAW.COM

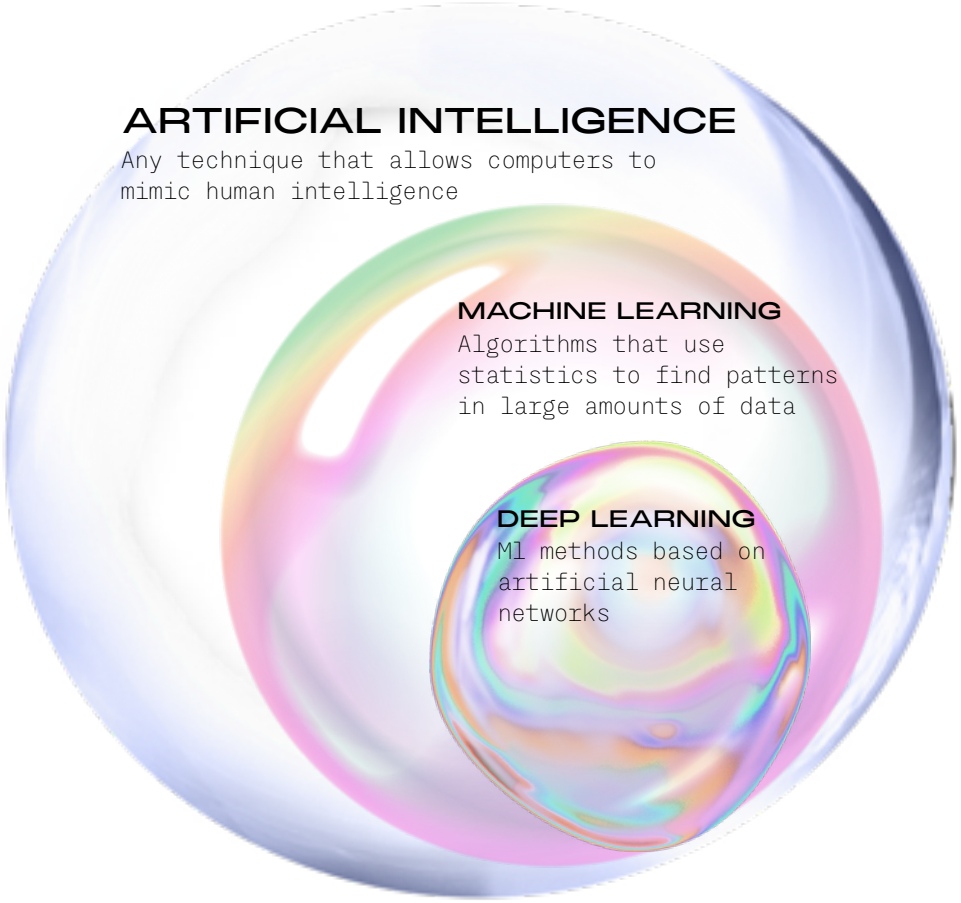
AI WHAT?



General ai - sentient and autonomous artificial intelligence (some argue this is impossible)

Narrow ai - ai that solves a particular problem


AI TECHNOLOGIES
STRONG / GENERAL AI
?
WEAK / SPECIALIZED KI
CLASSIC / SYMBOLIC
DECISION TREES
TABLE BASED AGENTS
SEARCH
EXPERT SYSTEMS
RULE BASED SYSTEMS
SYMBOLIC LOGIC
EXPERT SYSTEMS WITH NN INPUT
DECISION TREE LEARNING
XGBOOST
MONTE CARLO SEARCH WITH NN
MIXED ALGORITHMS
NEURAL NETWORKS
LINEAR REGRESSION
LSTM
NAIVE BAYES
CONVOLUTIONAL NN
RANDOM FOREST
ATTENTION
Q LEARNING
AUTOENCODER
EVOLUTIONARY ALGORTHIMS
DEEP LEARNING
MACHINE LEARNING

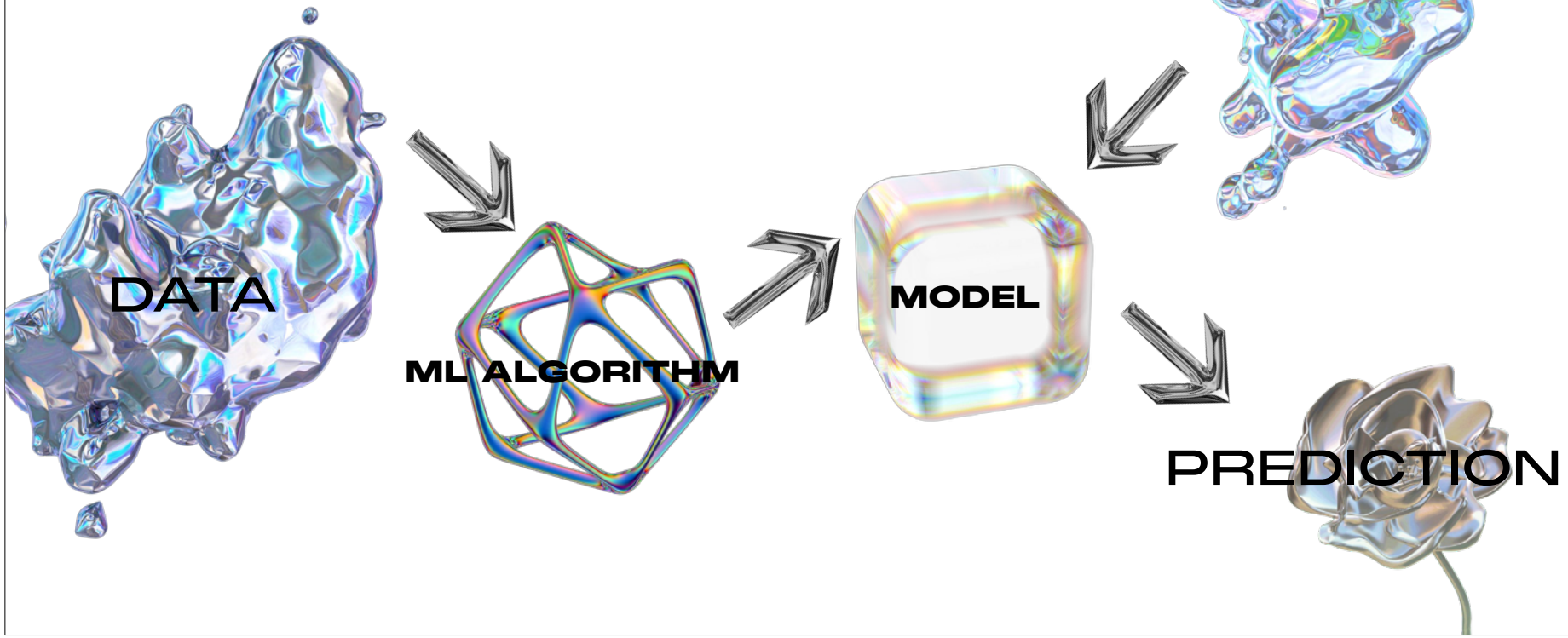


AI WHAT?

General ai - sentient and autonomous artificial intelligence (some argue this is impossible)

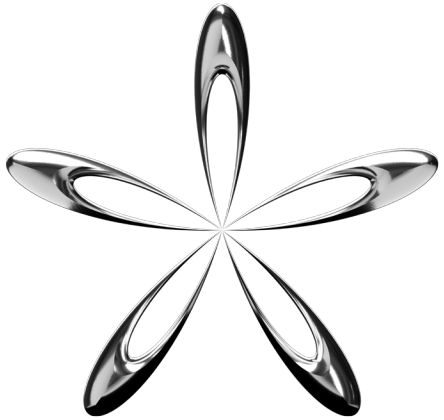
Narrow ai - ai that solves a particular problem

ML MODELS

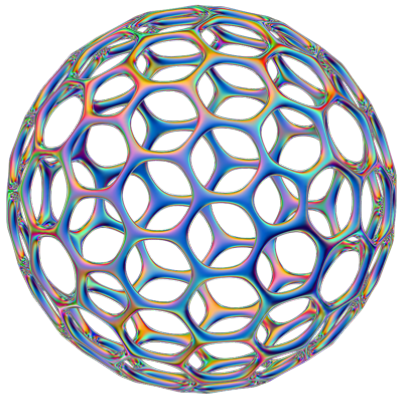


TYPES OF ML

SUPERVISED LEARNING

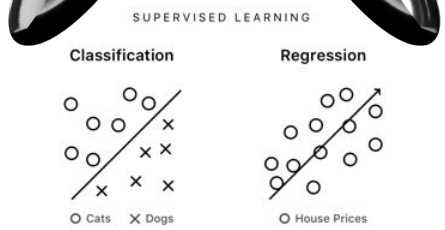


UNSUPERVISED LEARNING



REINFORCEMENT LEARNING

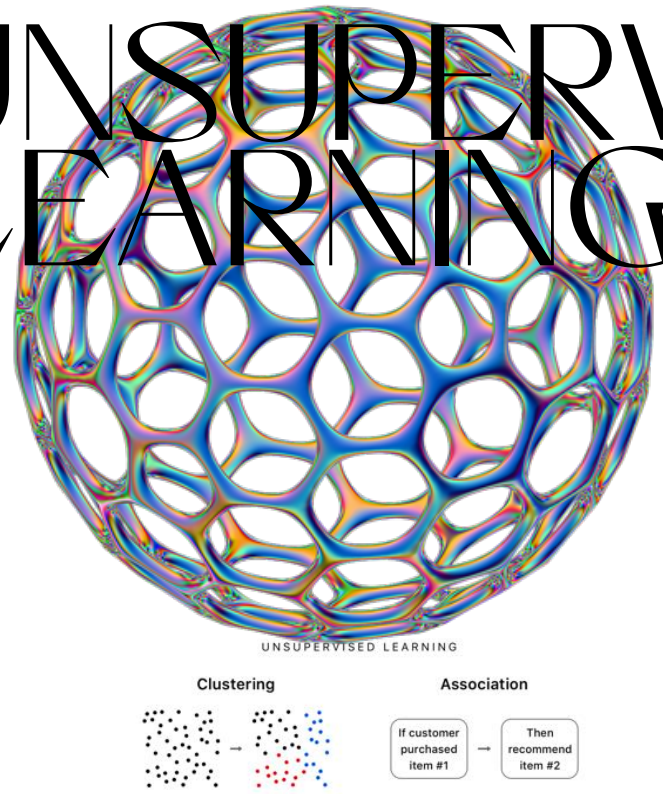
SUPERVISED LEARNING



Supervised learning allows us to make predictions using correctly labeled data. Labeled data is a group of examples that has informative tags or outputs. For example, photos with associated hashtags or a house's features (eq. number of bedrooms, location) and its price.

https://uxdesign.cc/an-intro-to-machine-learning-for-designers-5c74ba100257

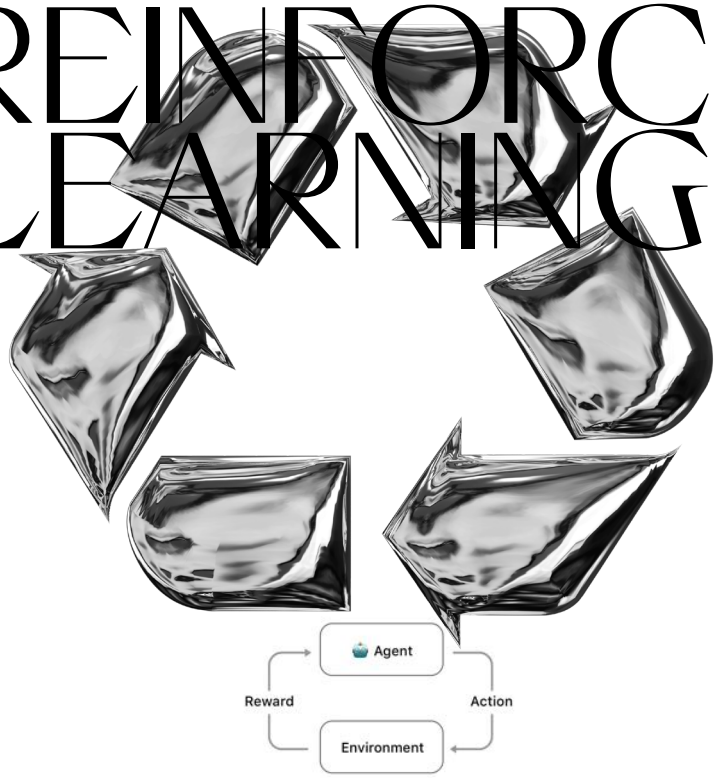
UNSUPERVISED LEARNING



Unsupervised learning is helpful when we have unlabeled data or we are not exactly sure what outputs (like an image's hashtags or a house's price) are meaningful. Instead we can identify patterns among unlabeled data. For example, we can identify related items on an e-commerce website or recommend items to someone based on others who made similar purchases.

https://uxdesign.cc/an-intro-to-machine-learning-for-designers-5c74ba100257

REINFORCEMENT LEARNING



Reinforcement learning doesn't use an existing data set. Instead we create an agent to collect its own data through trial-and-error in an environment where it is reinforced with a reward. For example, an agent can learn to play Mario by receiving a positive reward for collecting coins and a negative reward for walking into a Goomba. Used for Go or Chess too.

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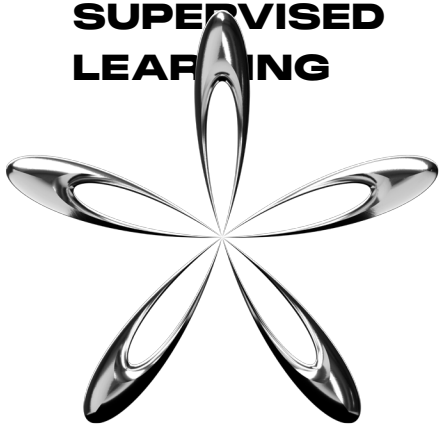
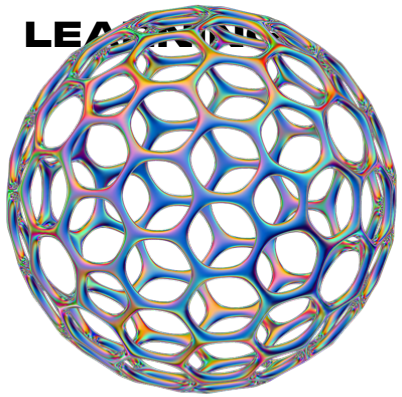
ALL ML CAN USE NEURAL NETWORKS

SUPERVISED LEARNING



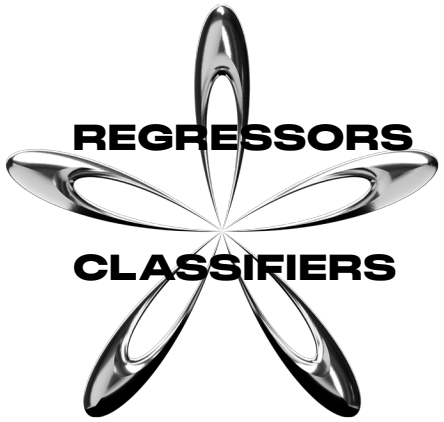
UNSUPERVISED LEARNING



REINFORCEMENT LEARNING

A DIFFERENT ANGLE ON ML : USE CASES

USE CASES :



https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0

Ai is Grouping Data

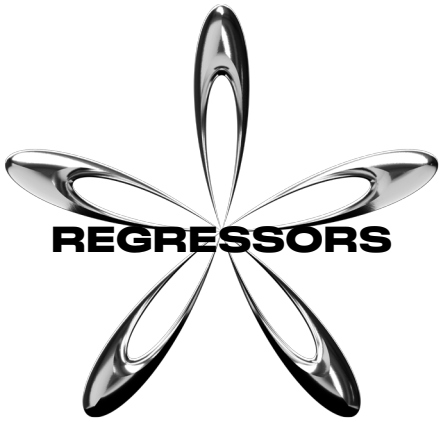
Grouping pictures of people based on similar features
Identifying genres of songs
Collaborative filters or recommenders (people like you liked...)

https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0

Ai is about recognizing stuff/categories in data

Text recognition
Speech-to-Text
Computer vision
Song detection
Face detection
Spam Filters
Translation

https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0



Ai is predicting/forecasting stuff from data

Weather predictions
Financial predictions
Health predictions

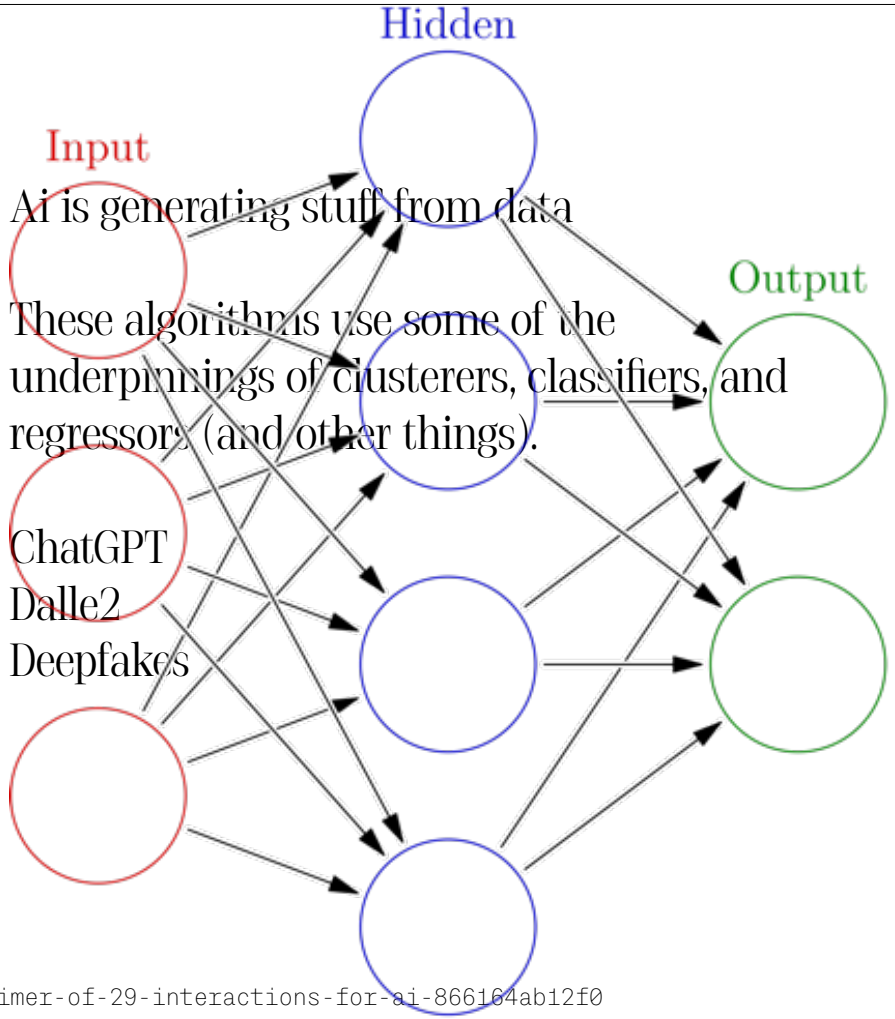
https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0

Ai is generating stuff from data

These algorithms use some of the underpinnings of clusterers, classifiers, and regressors (and other things).

ChatGPT
Dalle2
Deepfakes

https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0



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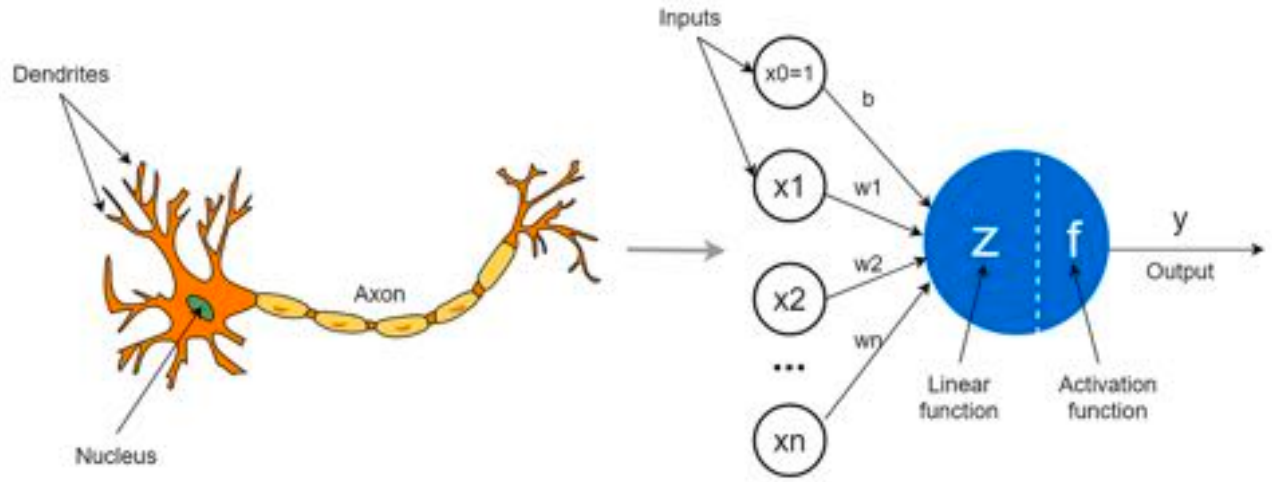
ANN

https://www.youtube.com/watch?v=Tsvxx-GGlTg

ARTIFICIAL NEURON



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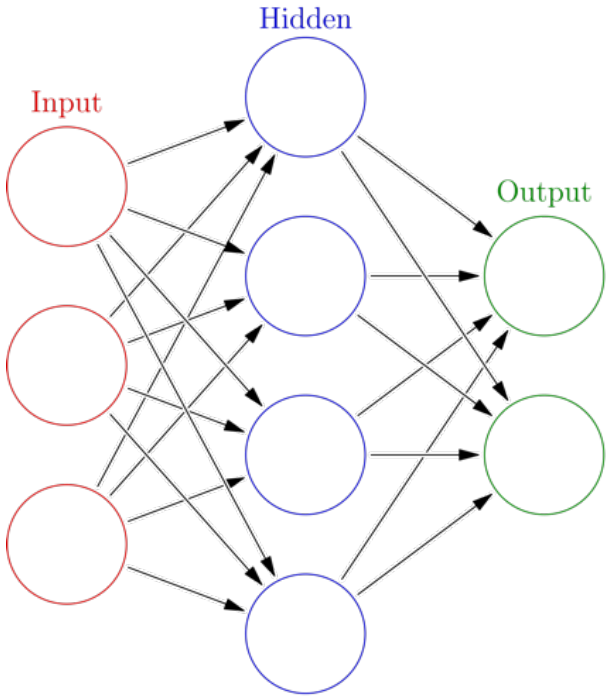


ANN

Artificial Neural Network

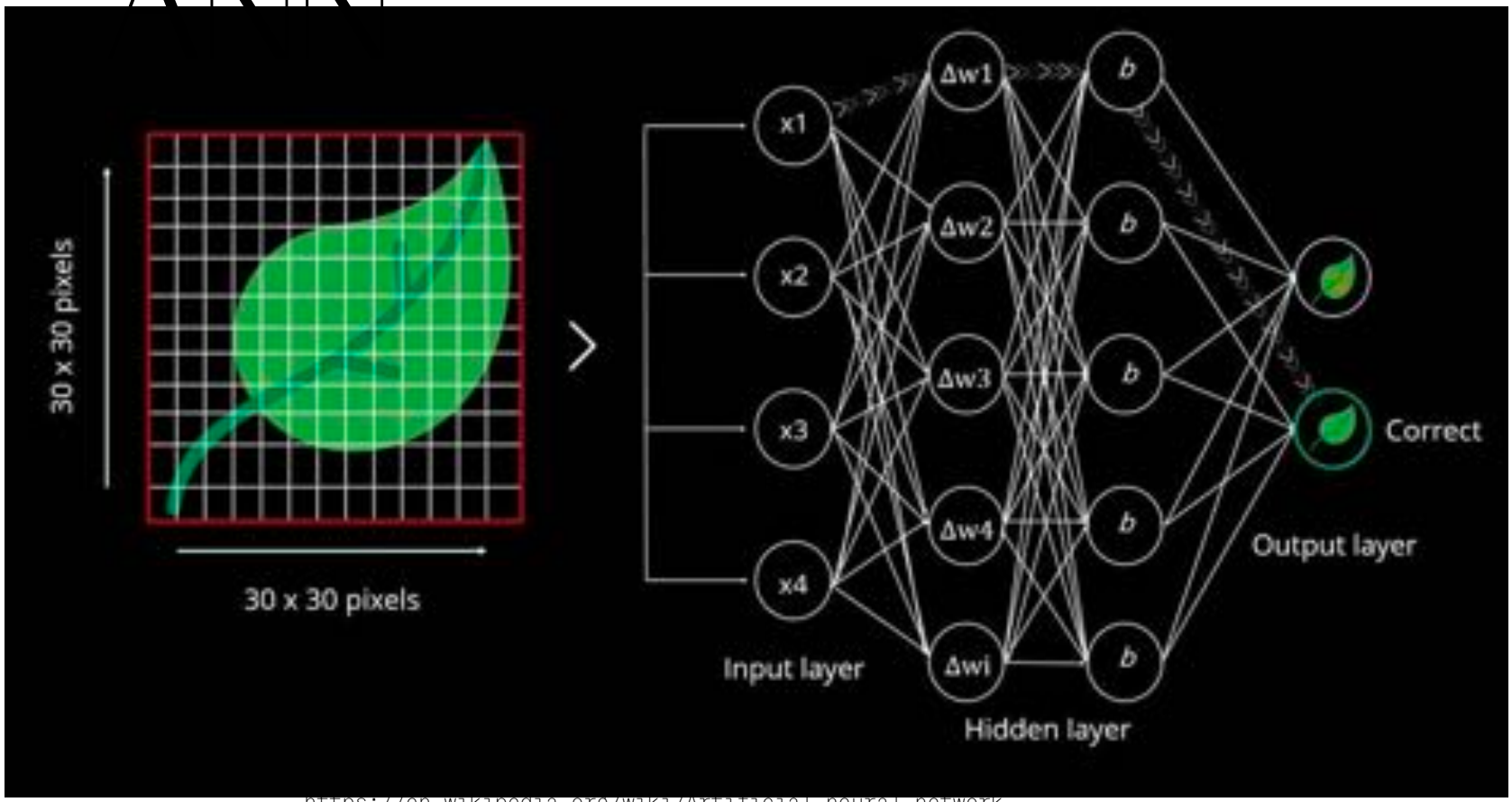
An ANN is based on a collection of connected units or nodes called artificial neurons, which loosely model the neurons in a biological brain.

Each connection, like the synapses in a biological brain, can transmit a signal to other neurons. An artificial neuron receives signals then processes them and can signal neurons connected to it. The "signal" at a connection is a real number, and the output of each neuron is computed by some non-linear function of the sum of its inputs.

Neurons and edges typically have a weight that adjusts as learning proceeds. The weight increases or decreases the strength of the signal at a connection.

https://en.wikipedia.org/wiki/Artificial_neural_network

ANN



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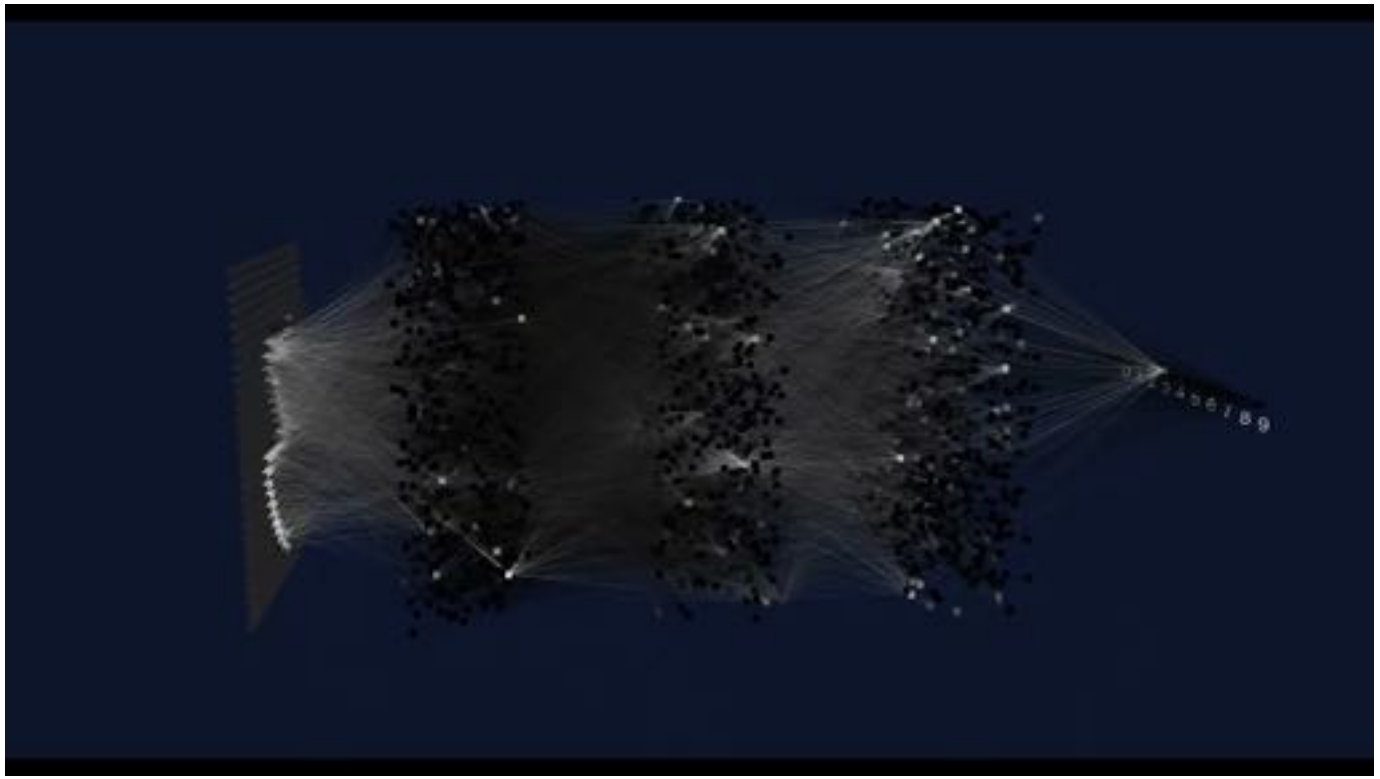
ANN



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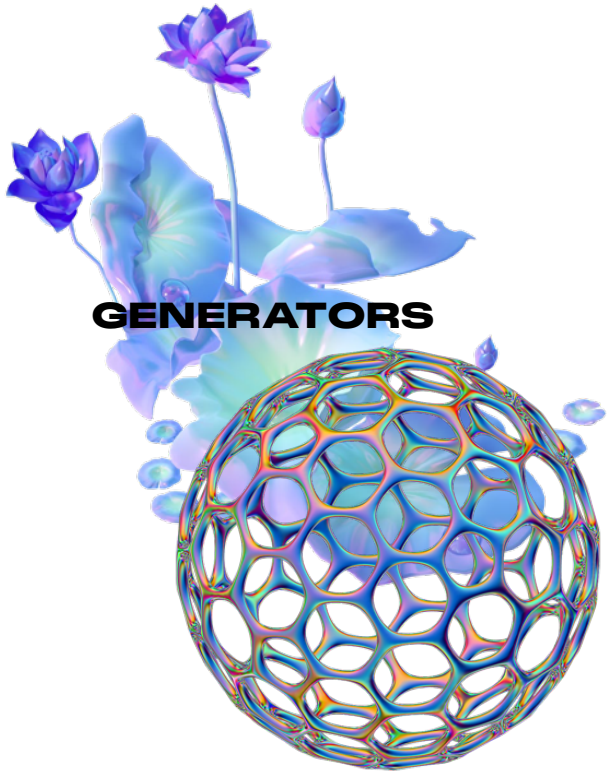


GAN

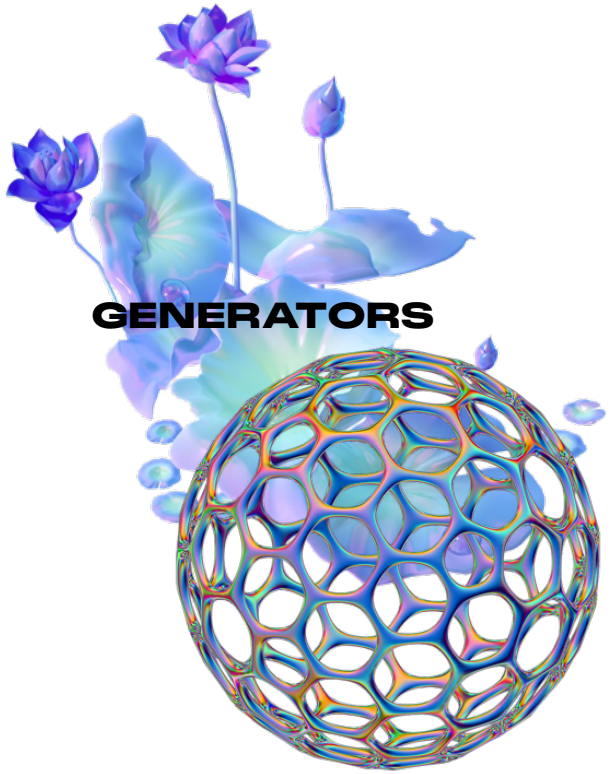
Generative Adversarial Networks

"Generative" describes a class of statistical models that contrasts
with discriminative models.

Generative models can generate new data instances.

Discriminative models discriminate between different kinds of data instances.

https://becominghuman.ai/a-primer-of-29-interactions-for-ai-866164ab12f0

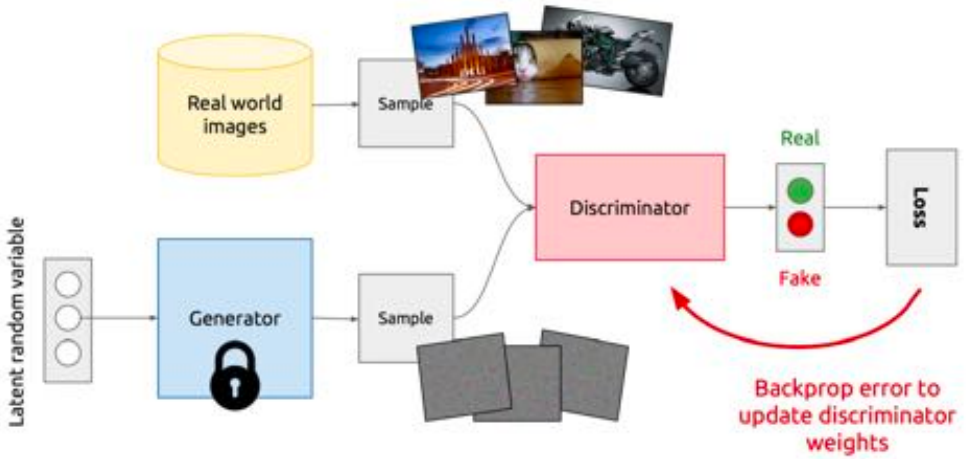


GAN

Given a training set, this technique learns to generate new data with the same statistics as the training set. For example, a GAN trained on photographs can generate new photographs that look at least superficially authentic to human observers, having many realistic characteristics. Though originally proposed as a form of generative model for unsupervised learning, GANs have also proved useful for semi-supervised learning,[3] fully supervised learning,[3] and reinforcement learning.[4]

https://en.wikipedia.org/wiki/Generative_adversarial_network

TRAINING A GAN



https://en.wikipedia.org/wiki/Generative_adversarial_network

GAN GENERATE!

Pix2Pix

https://en.wikipedia.org/wiki/Generative_adversarial_network


HANDS ON

TODAY

The . Is -> To use the resources in GitHub to explore the generative possibilities of Ai.

News story as inspiration for the design of the protagonist of the next Dennis Villeneauve Social Sci-fi film (Its gonna be Arrival-like).

Who/what is your character?
What inspired you from the news story?
What tools did you use when making it?
What was interesting from the process?

Presentations at 15:00!

GENERATE

HTTPS://WWW.THEGUARDIAN.COM/TECHNOLOGY/2023/MAR/16/THE-STUPIDITY-OF-AI-ARTIFICIAL-INTELLIGENCE-DALL-E-CHATGPT

15:00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