

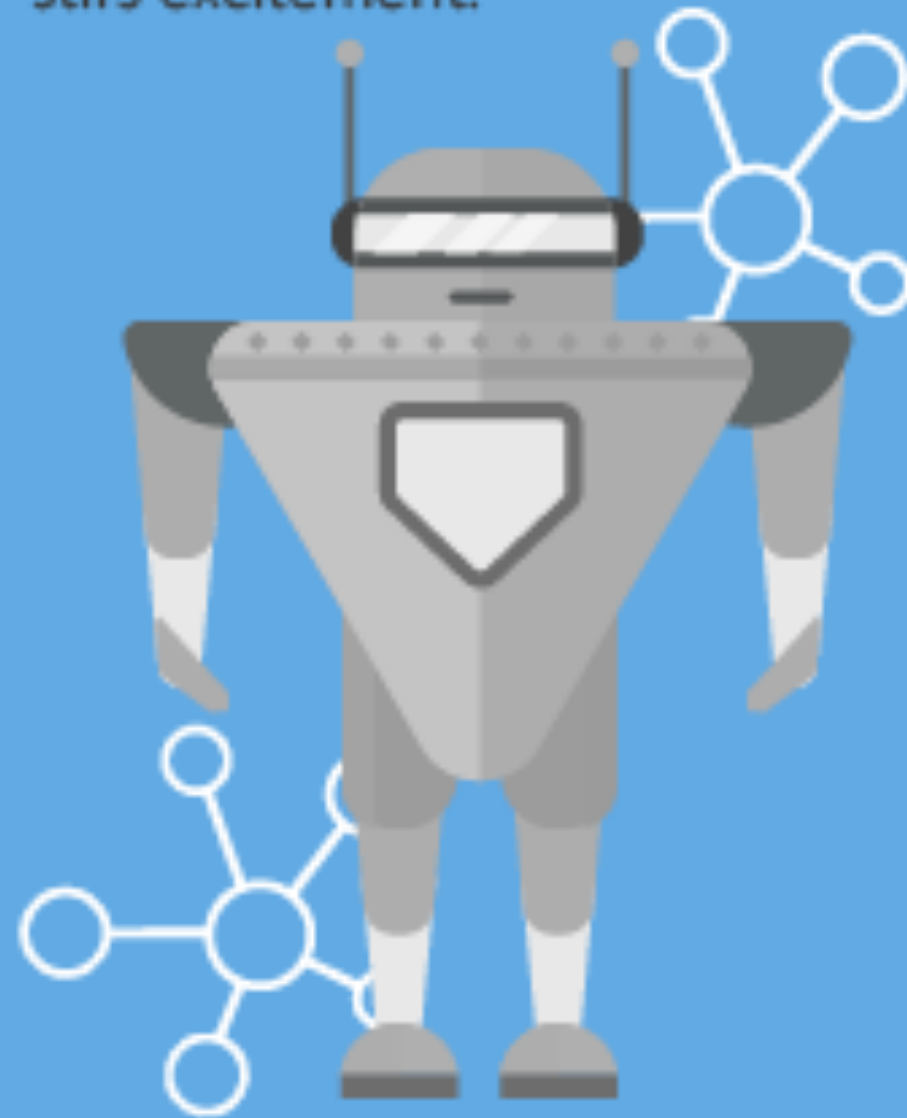
Introduction to Machine Learning





ARTIFICIAL INTELLIGENCE

Early artificial intelligence stirs excitement.



MACHINE LEARNING

Machine learning begins to flourish.



DEEP LEARNING

Deep learning breakthroughs drive AI boom.



1950's 1960's 1970's 1980's 1990's 2000's 2010's

Since an early flush of optimism in the 1950's, smaller subsets of artificial intelligence - first machine learning, then deep learning, a subset of machine learning - have created ever larger disruptions.



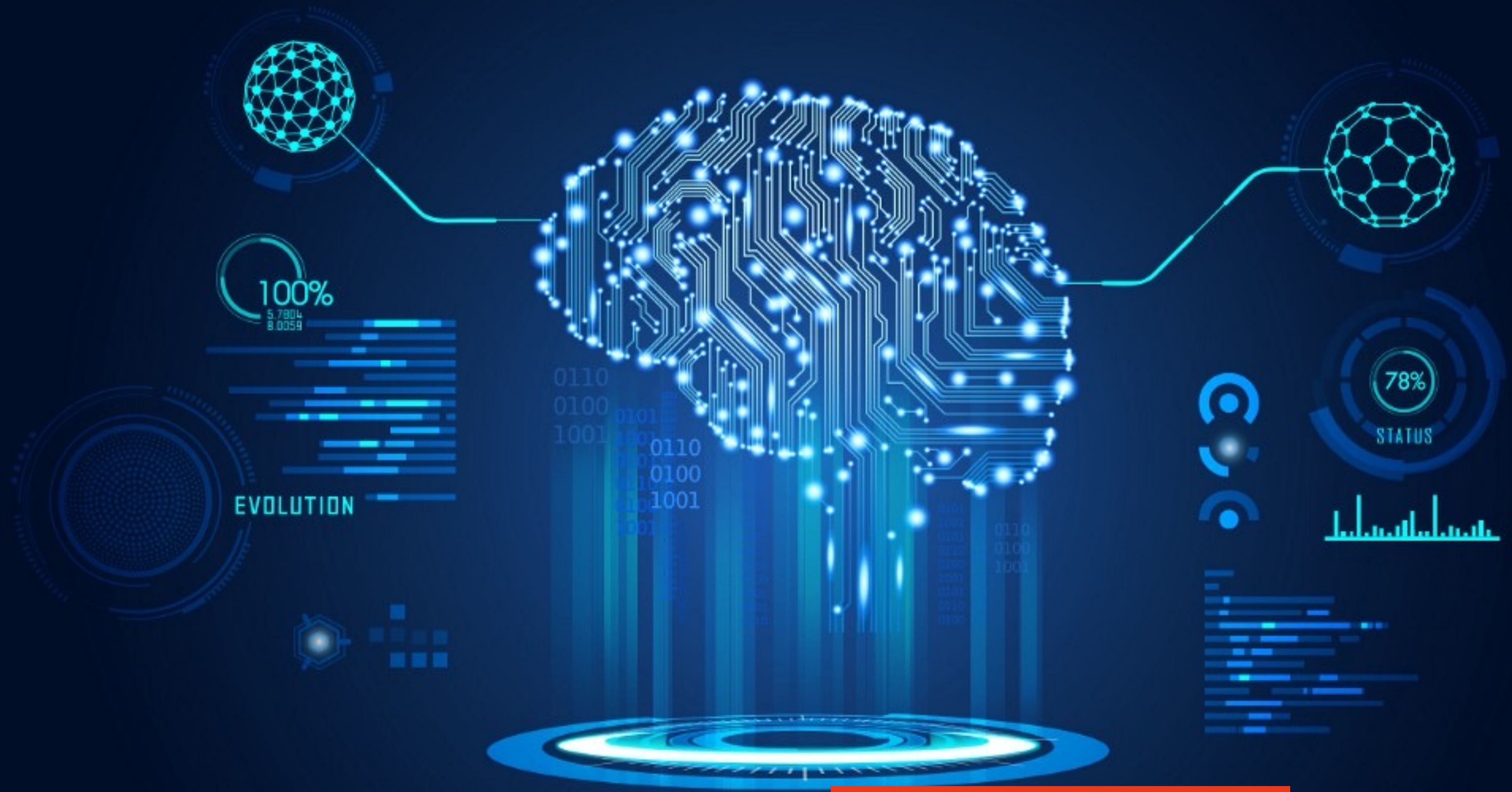
Machine learning is, in part, based on a model of brain cell interaction according to Donald Hebb.

Translating Hebb's concepts to artificial neural networks and artificial neurons, his model can be described as a **way of altering the relationships between artificial neurons (also referred to as nodes) and the changes to individual neurons.**

The relationship between two neurons/nodes strengthens if the two neurons/nodes are activated at the same time and weakens if they are activated separately.

The Organization of Behavior (1949)

-- Donald Hebb



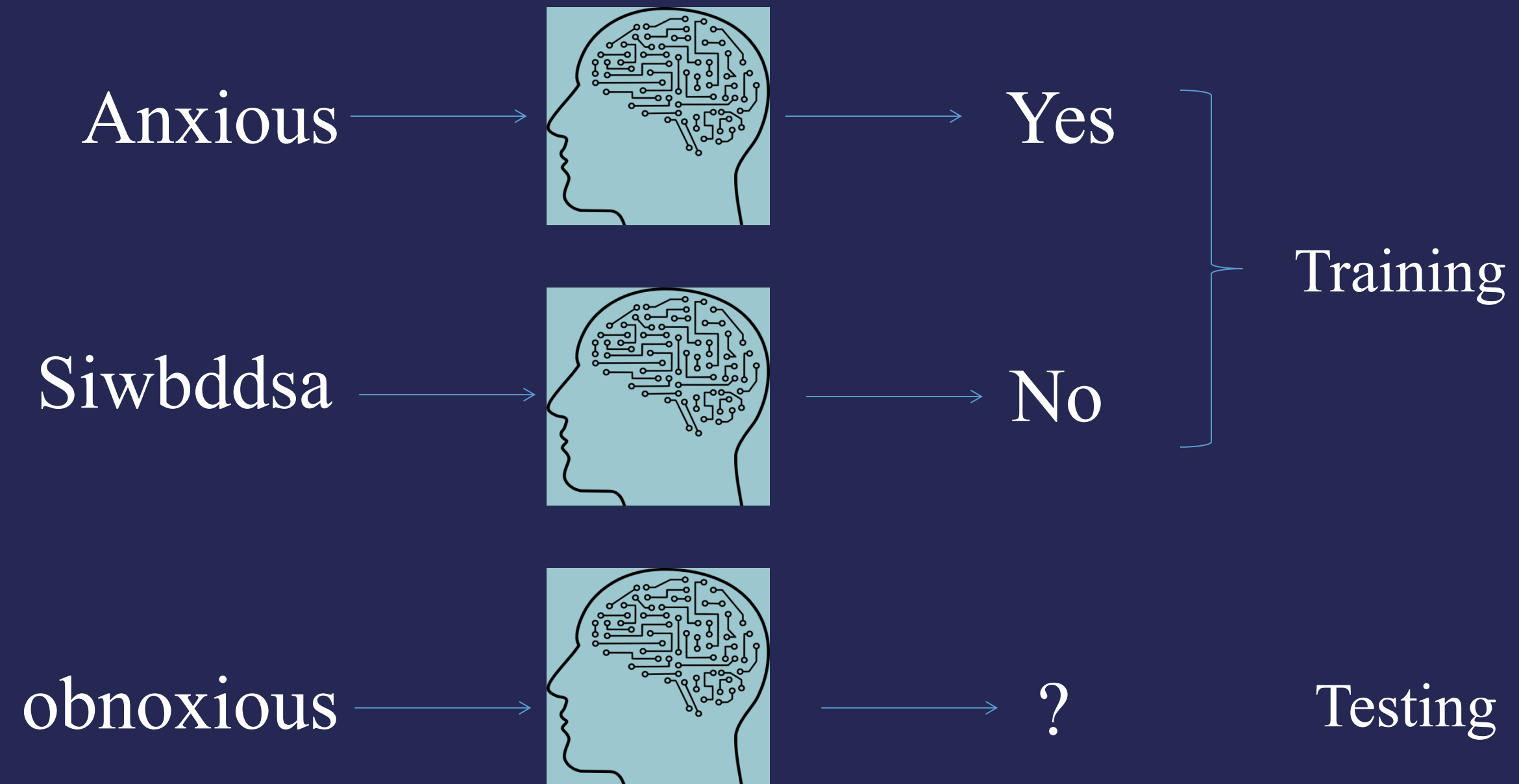
Let's check some Examples

CHECK THESE WORDS

- Anxious
- Siwbddsa
- obnoxious



*Are these English
Words*

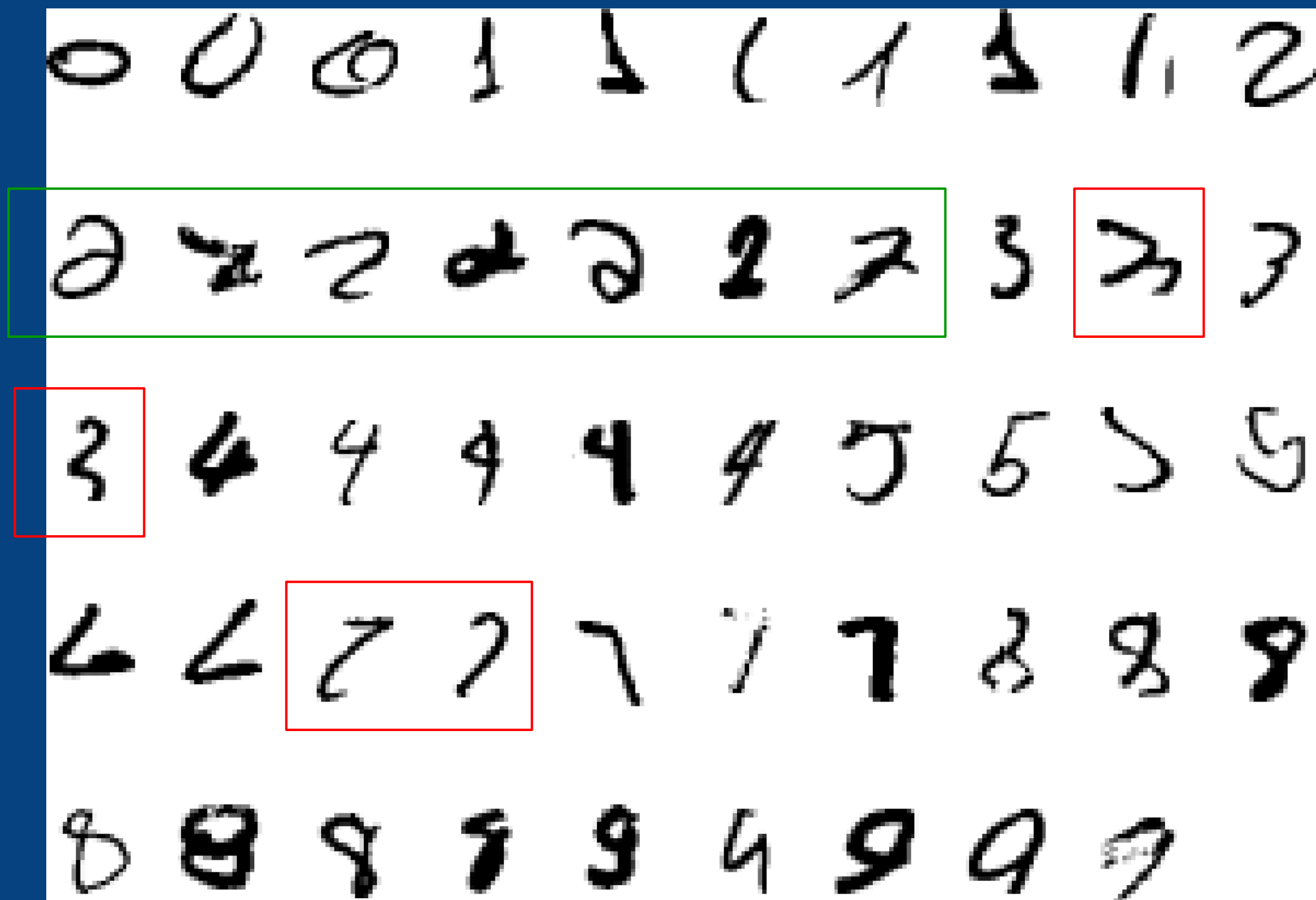


Find the number of faces



Find the number of faces

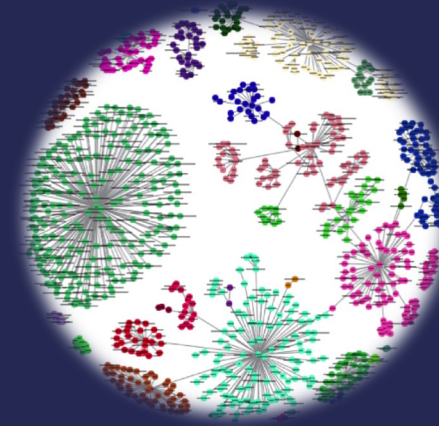




A classic example of a task that requires machine learning: It is very hard to say what makes a 2

Progress

Over the time



Nearest Neighbor
Algorithm

KNN ..,



Multilayer Perceptron

Feed Forward & Back
Propagation



Boosting Algorithms

Adaboost, Brownboost,
LPBoost ..,

Progress

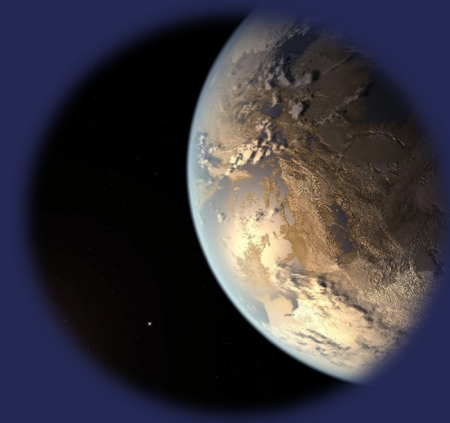
Over the time



Speech Recognition



Facial
Recognition



Identifying Exoplanets

Applications

Image Recognition

Cataloging and detecting a feature or an object

Language Translation

Translation to other languages with contextual meaning

Banking Domain

To prevent fraud and unauthorized activities

Applications

Social Media Features

Suggestions based on user activities

Product Recommendations

Based on previous purchase patterns, history..,

Sentiment Analysis

Real time application determines emotion or opinions on public platforms