

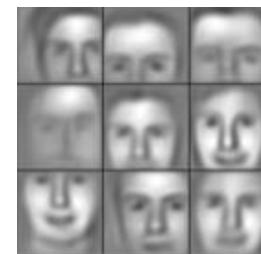
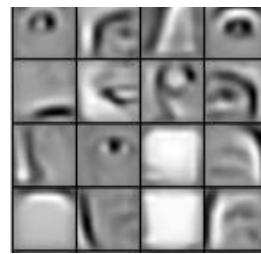
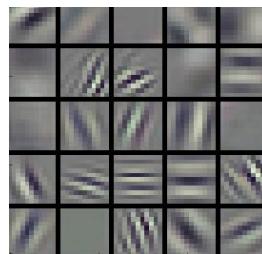
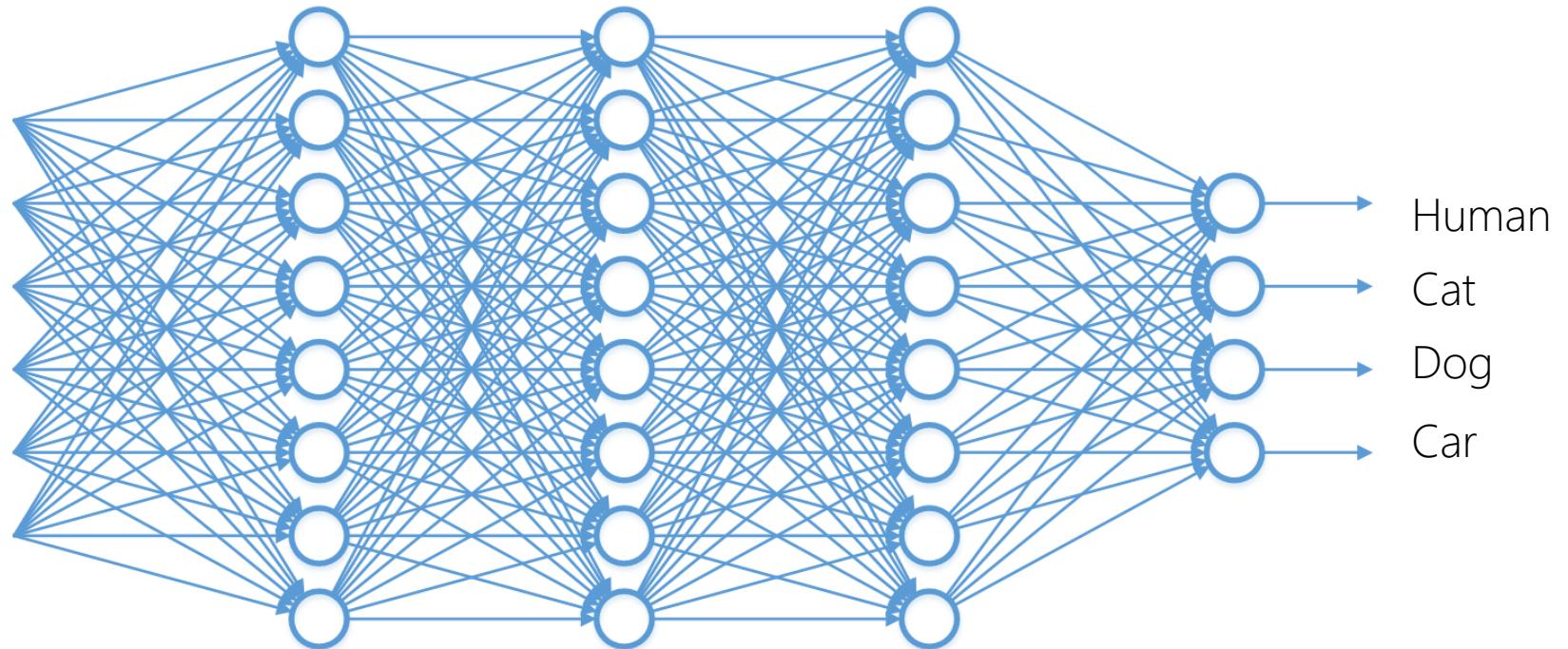


PLURALSIGHT
LIVE

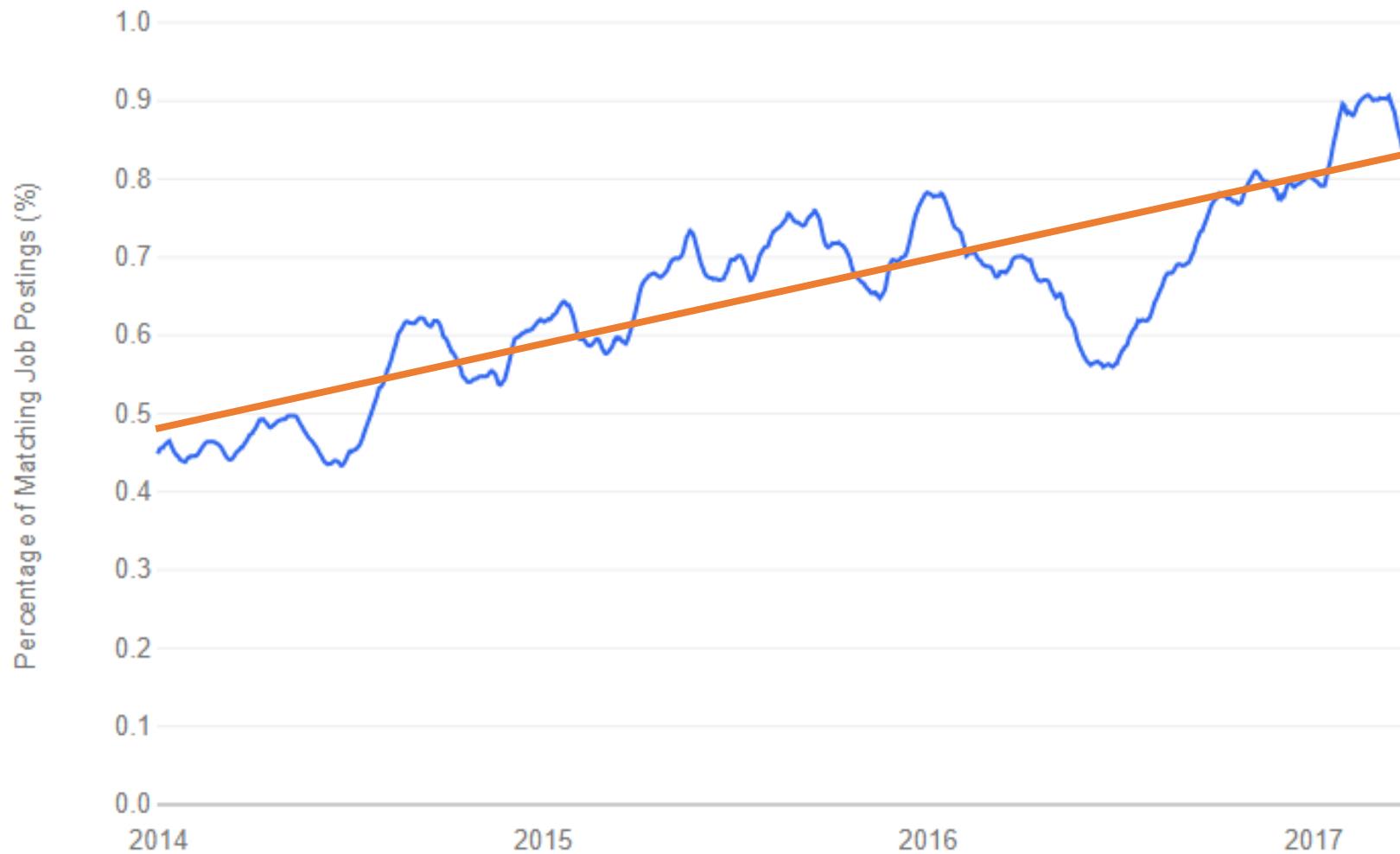
The logo for Pluralsight LIVE is centered against a black background. It features the word "PLURALSIGHT" in a small, white, sans-serif font above the word "LIVE" in a large, bold, white, sans-serif font. The "LIVE" text is oriented vertically. Behind the text is a complex, abstract graphic composed of numerous thin, red, curved lines that form a dense, jagged, and organic shape, resembling a stylized flame or a microscopic view of a material's atomic structure.





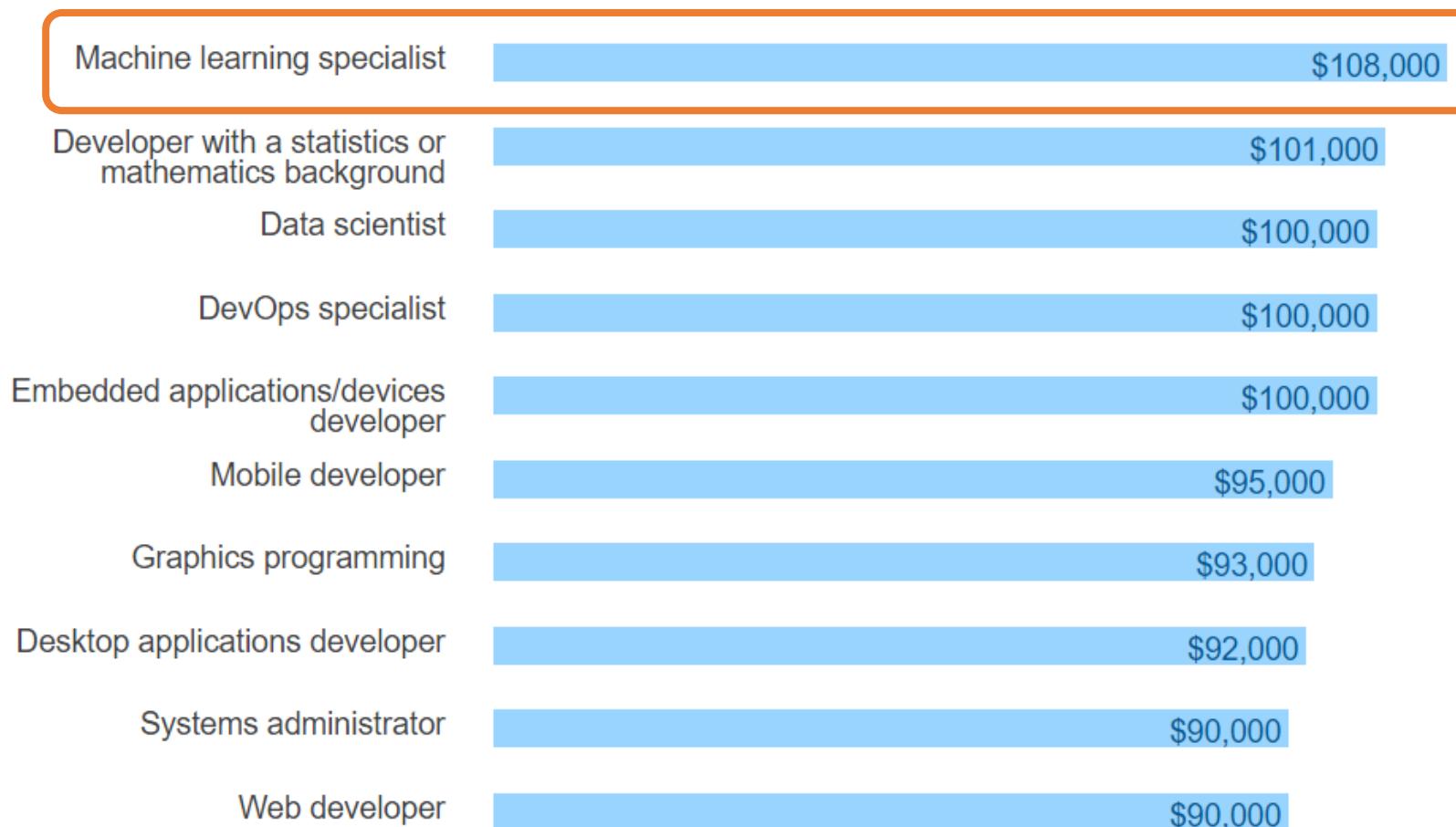


Job Postings for Machine Learning

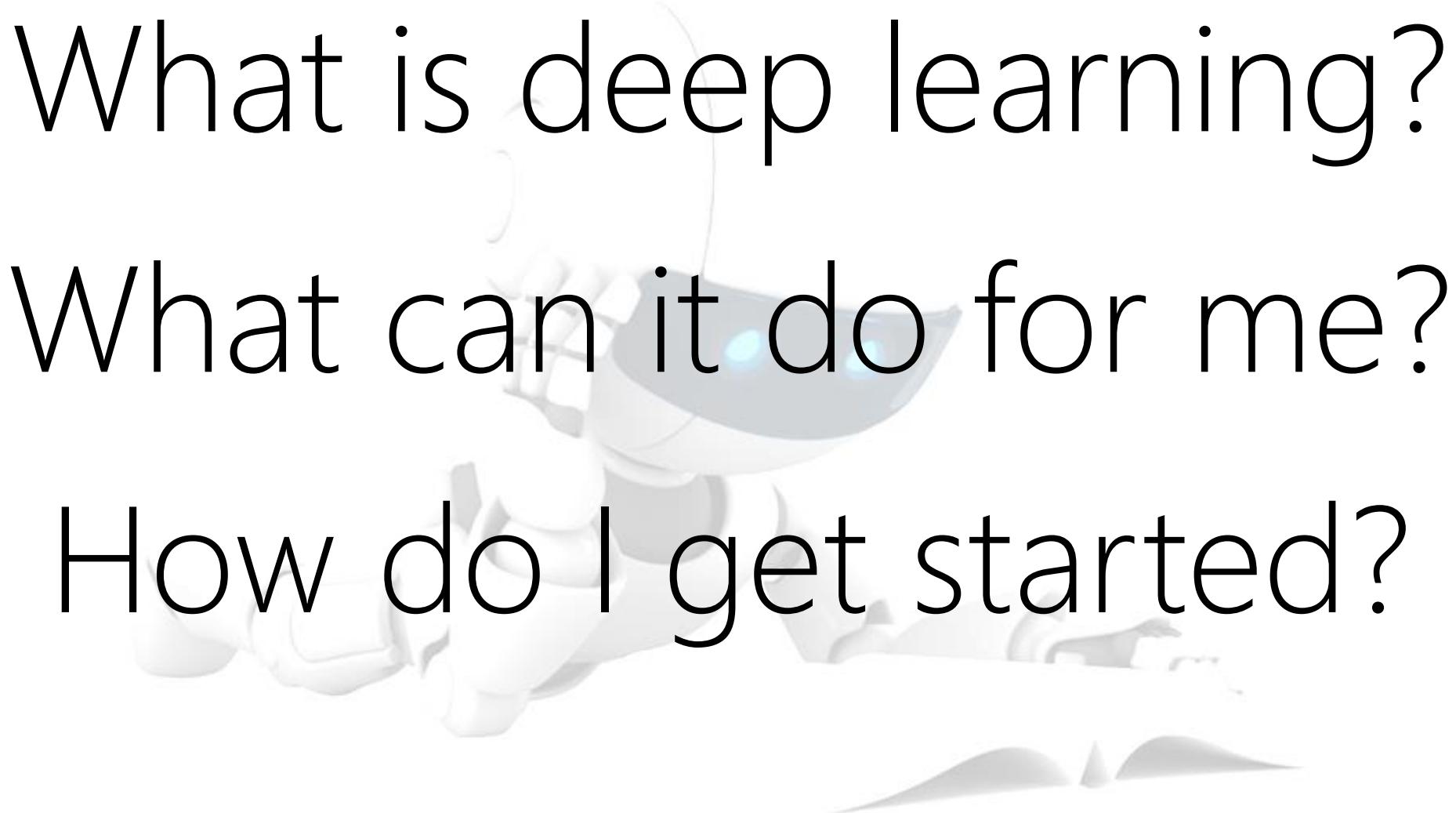


Source: Indeed.com

Average Salary by Job Type (USA)







What is deep learning?

What can it do for me?

How do I get started?

A white humanoid robot arm reaches from the right side of the frame towards the center. The robot has a metallic, articulated arm with a hand that appears to be reaching out. A small yellow warning label with a red exclamation mark and the word 'Caution' is visible on its upper arm.

What is deep learning?

Deep Learning

Artificial intelligence

Machine learning

Neural network

Multiple hidden layers

Hierarchical representations

Makes predictions with data



Deep Learning

Artificial intelligence

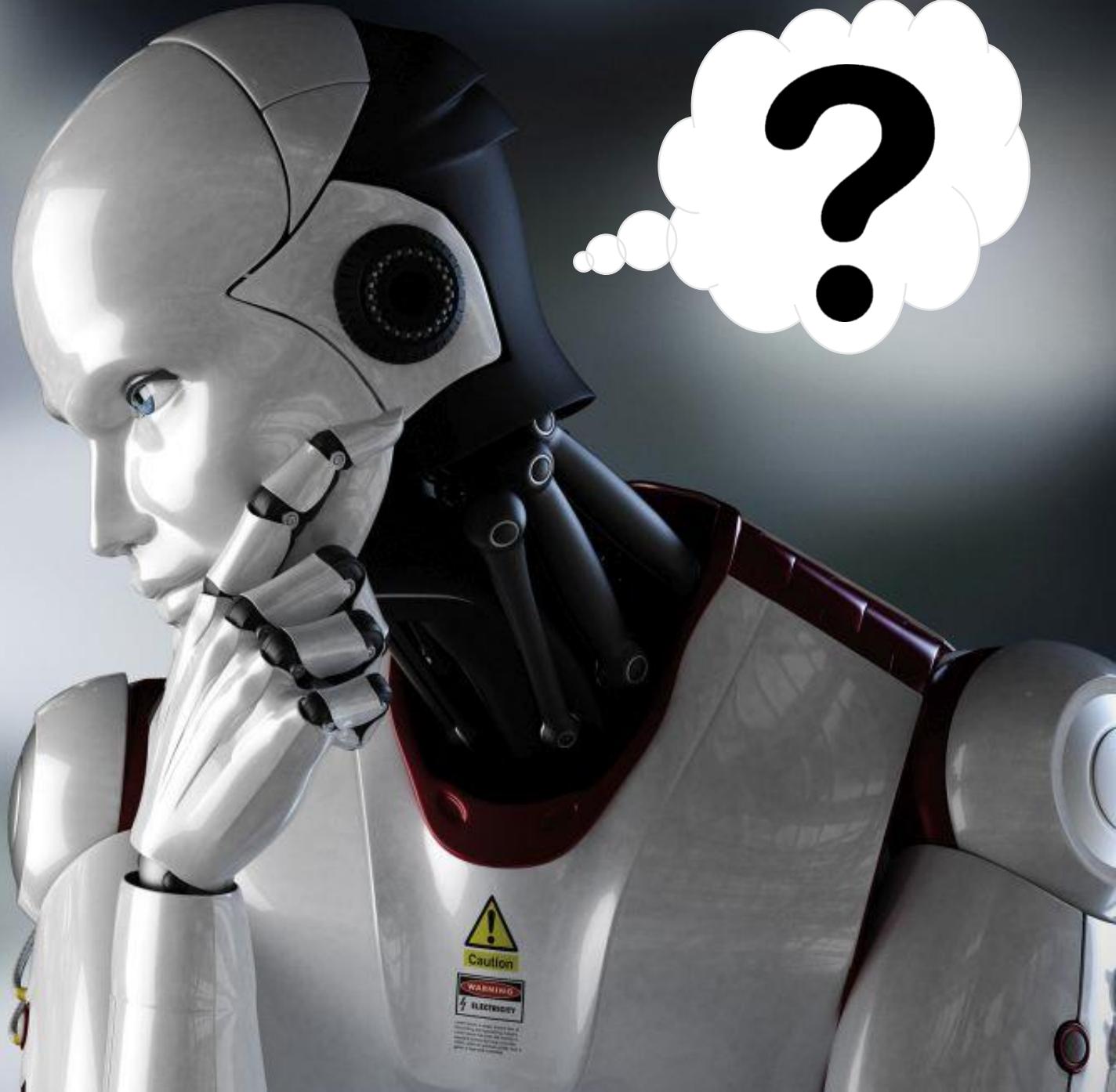
Machine learning

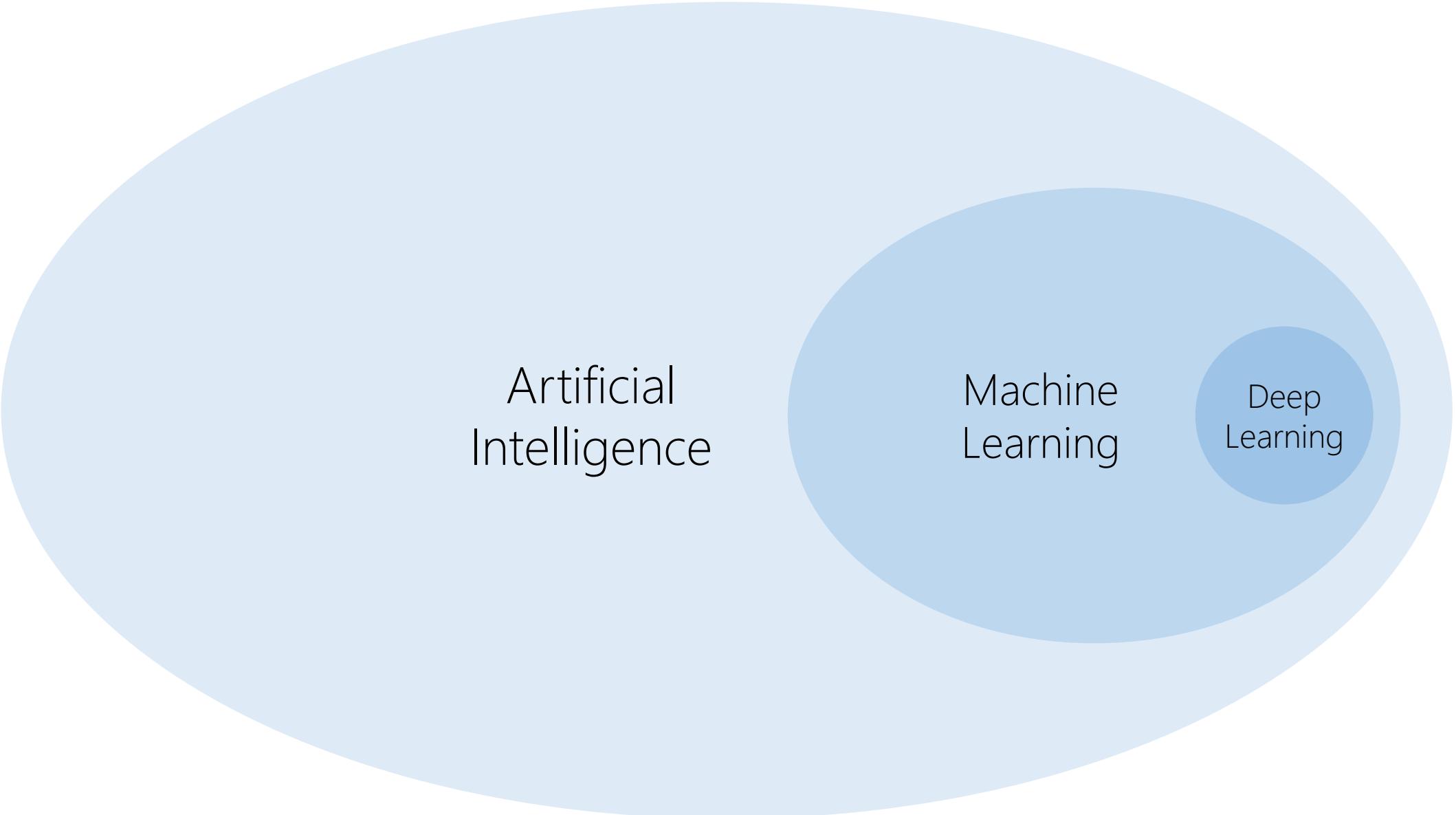
Neural network

Multiple hidden layers

Hierarchical representations

Makes predictions with data



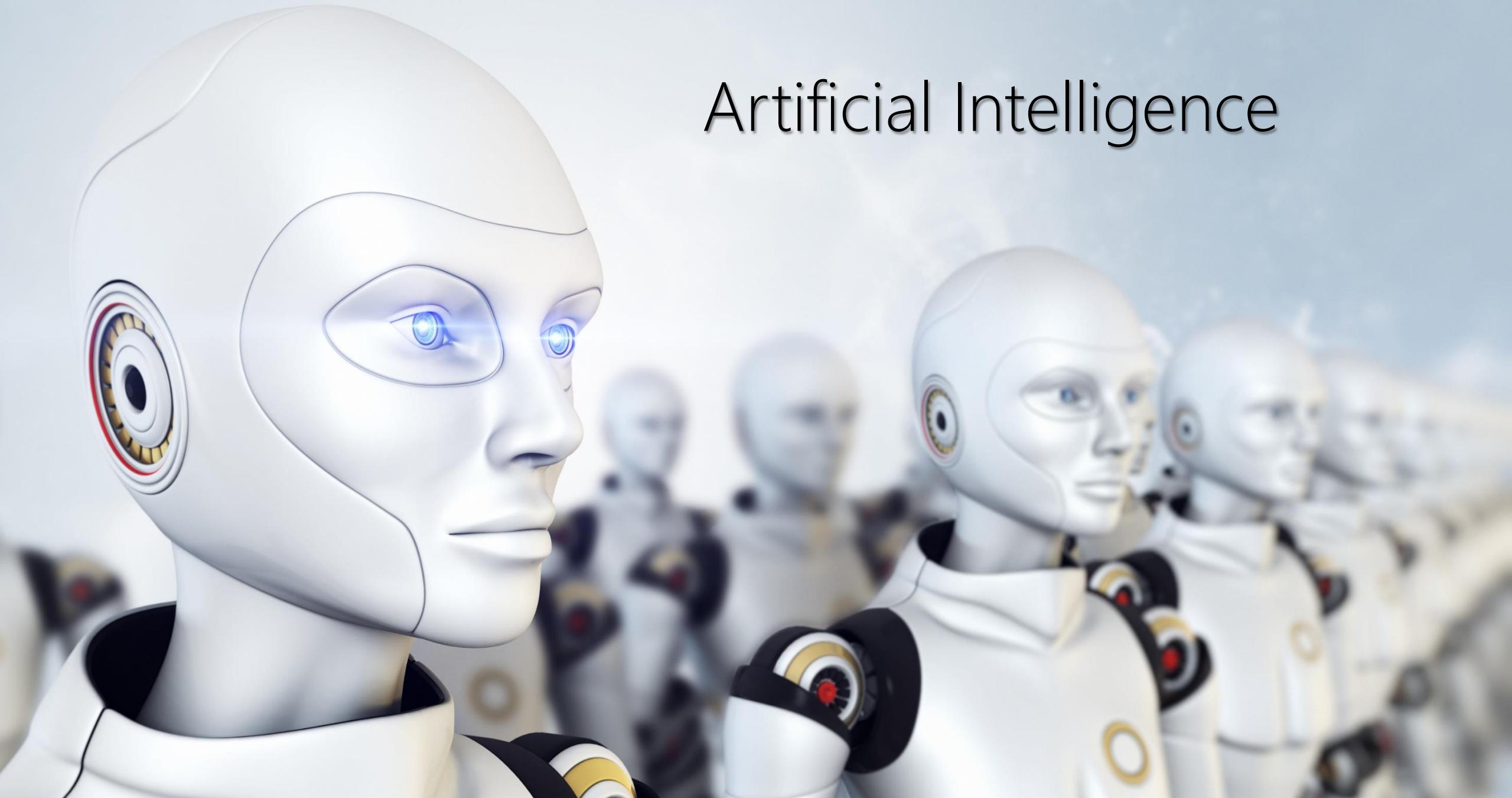


Artificial
Intelligence

Machine
Learning

Deep
Learning

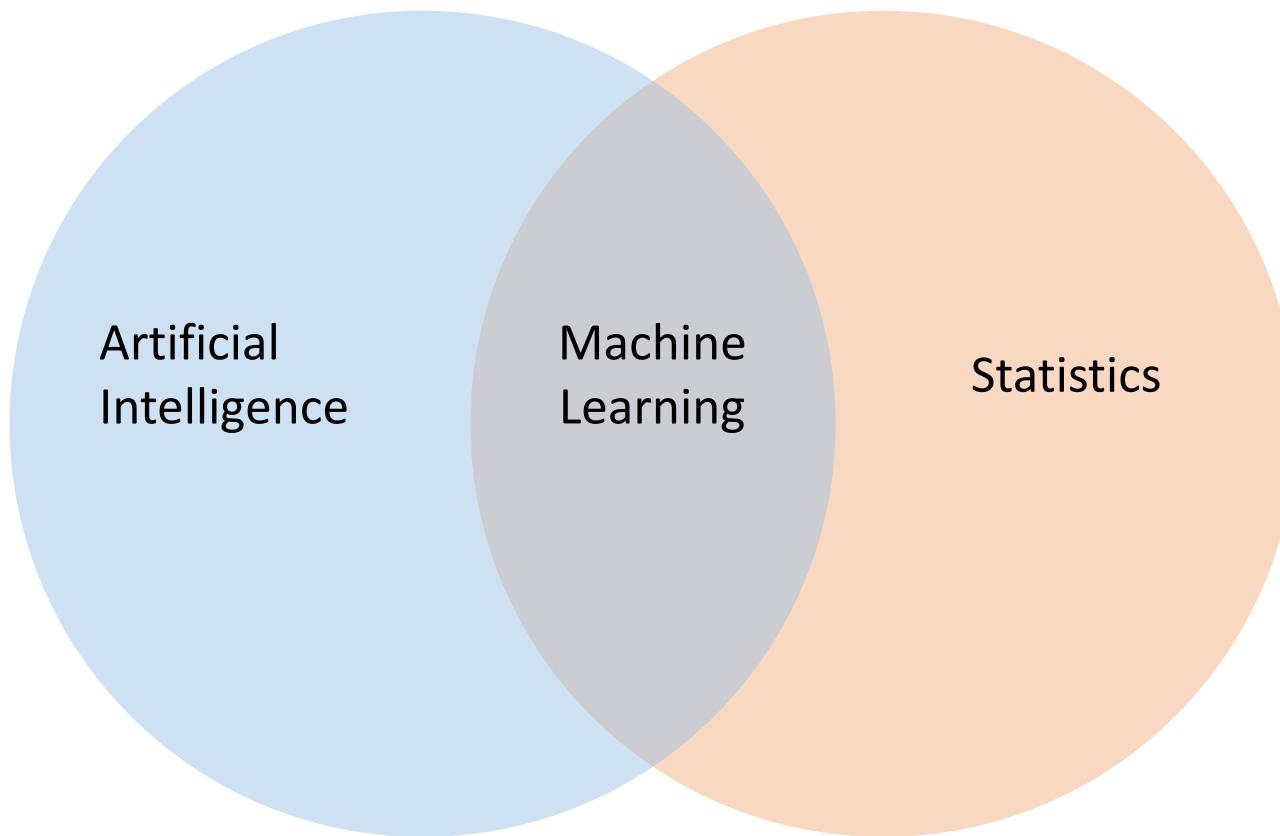
Artificial Intelligence

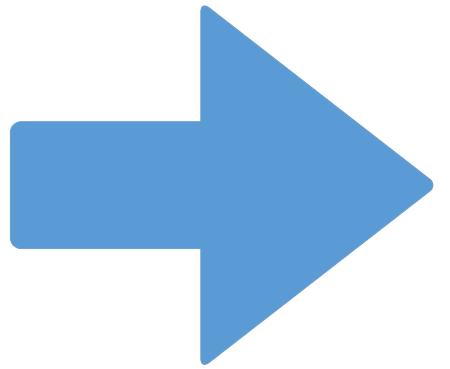
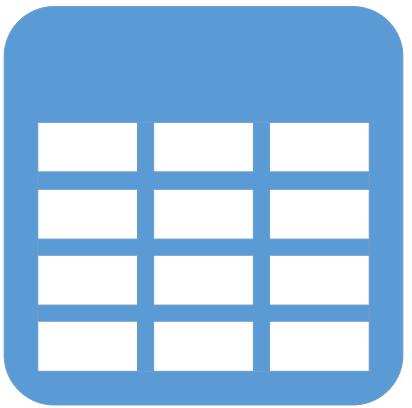
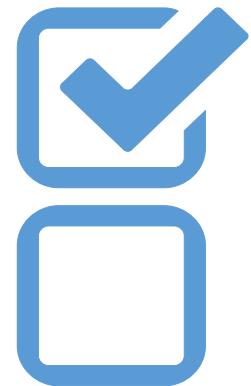
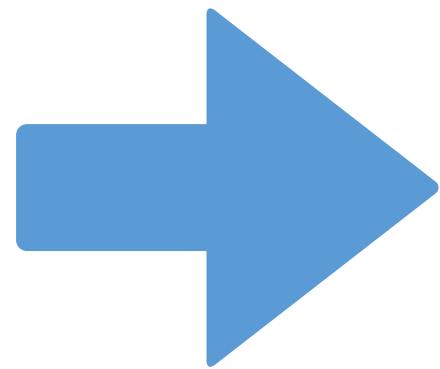


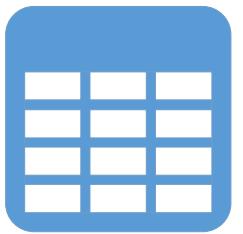


Machine Learning

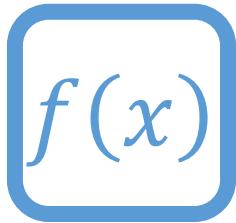
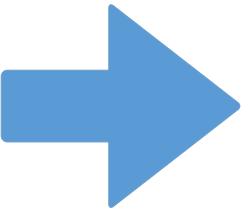
Machine Learning



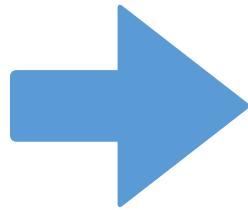
 $f(x)$ 



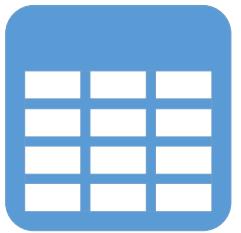
Data



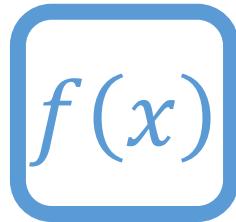
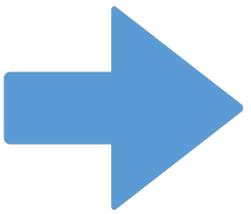
Function



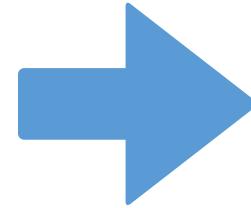
Prediction



Data



Function



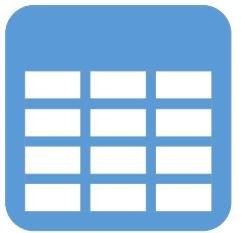
Prediction



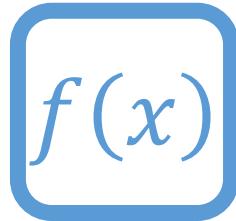
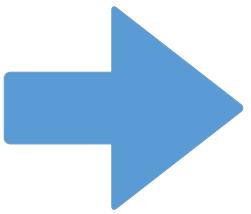
Cat



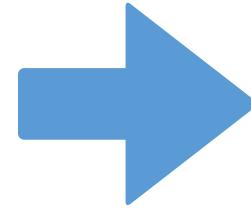
Dog



Data



Function



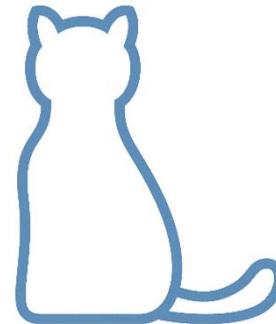
Prediction



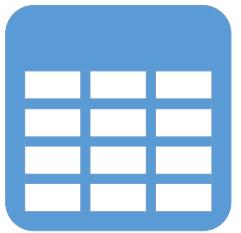
Cat



Dog



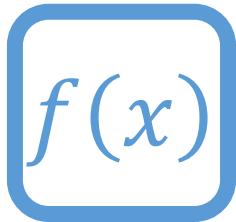
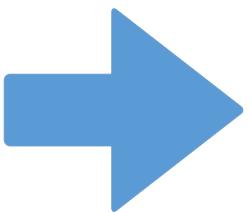
Is cat?



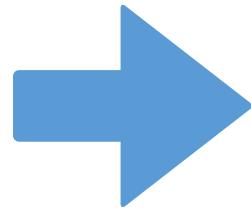
Data



Cat



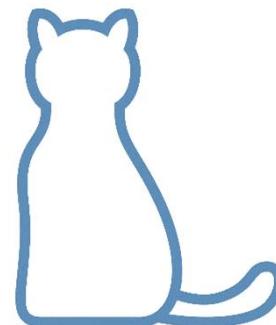
Function



Prediction



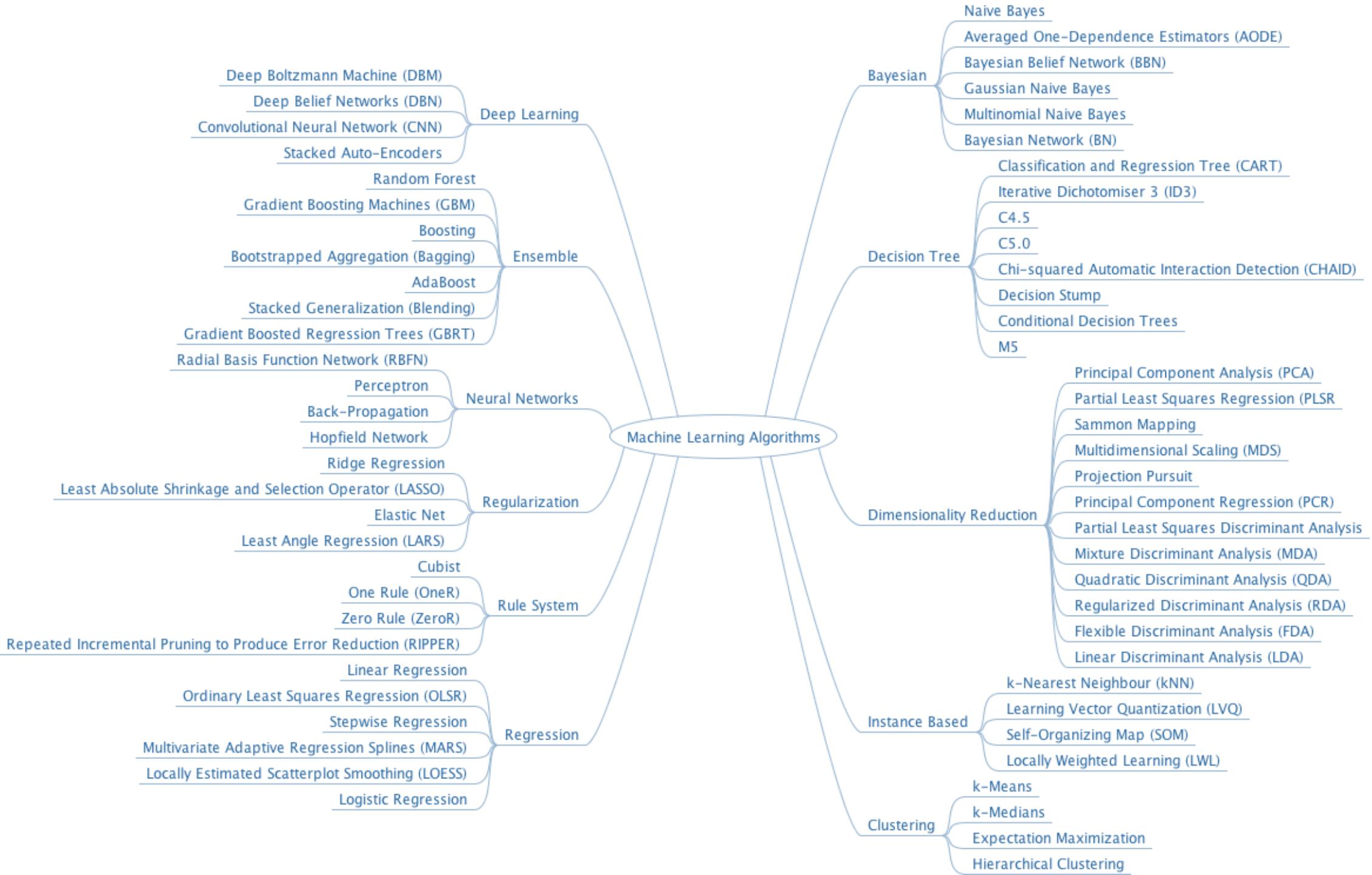
Dog

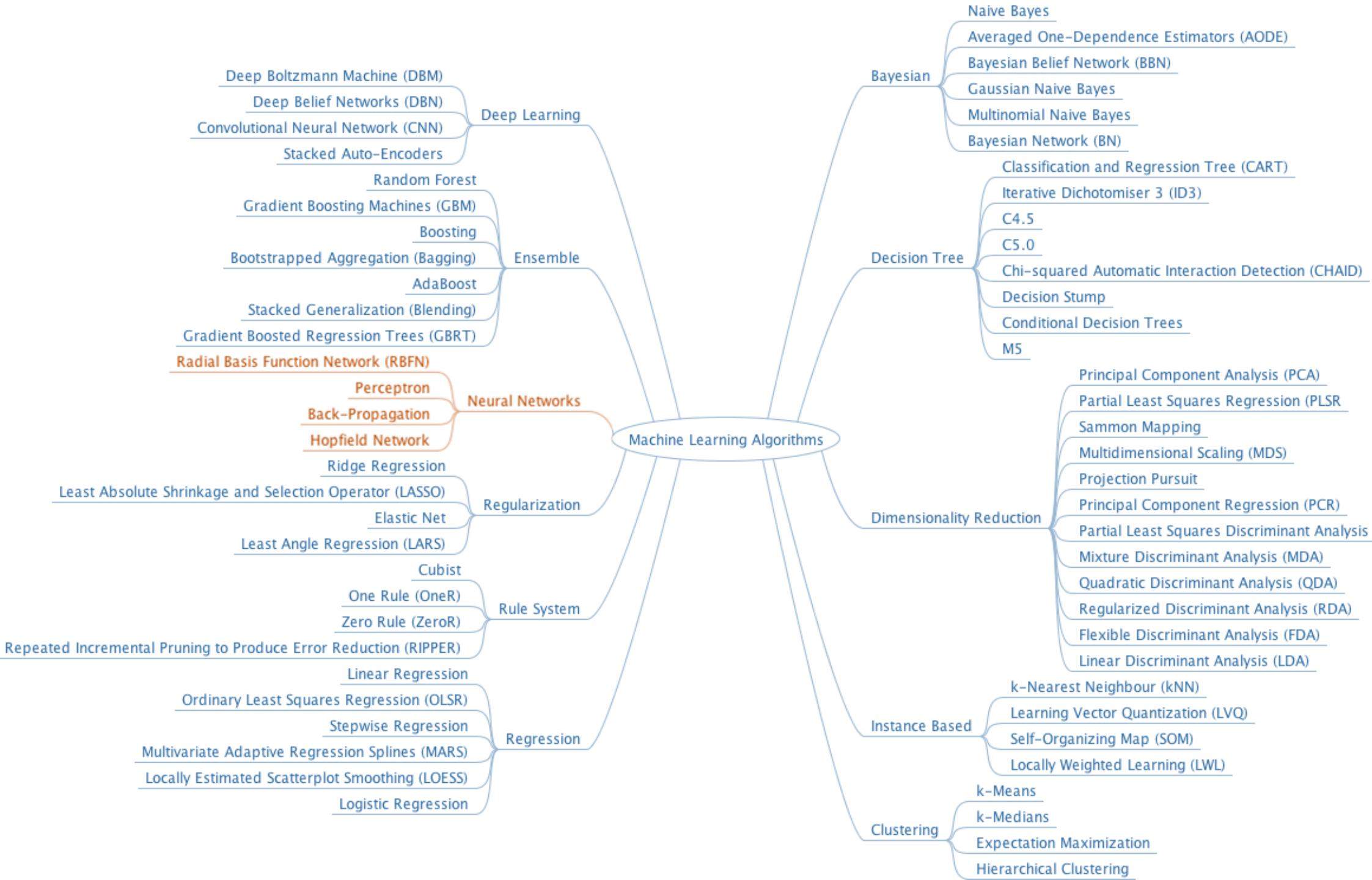


Is cat?

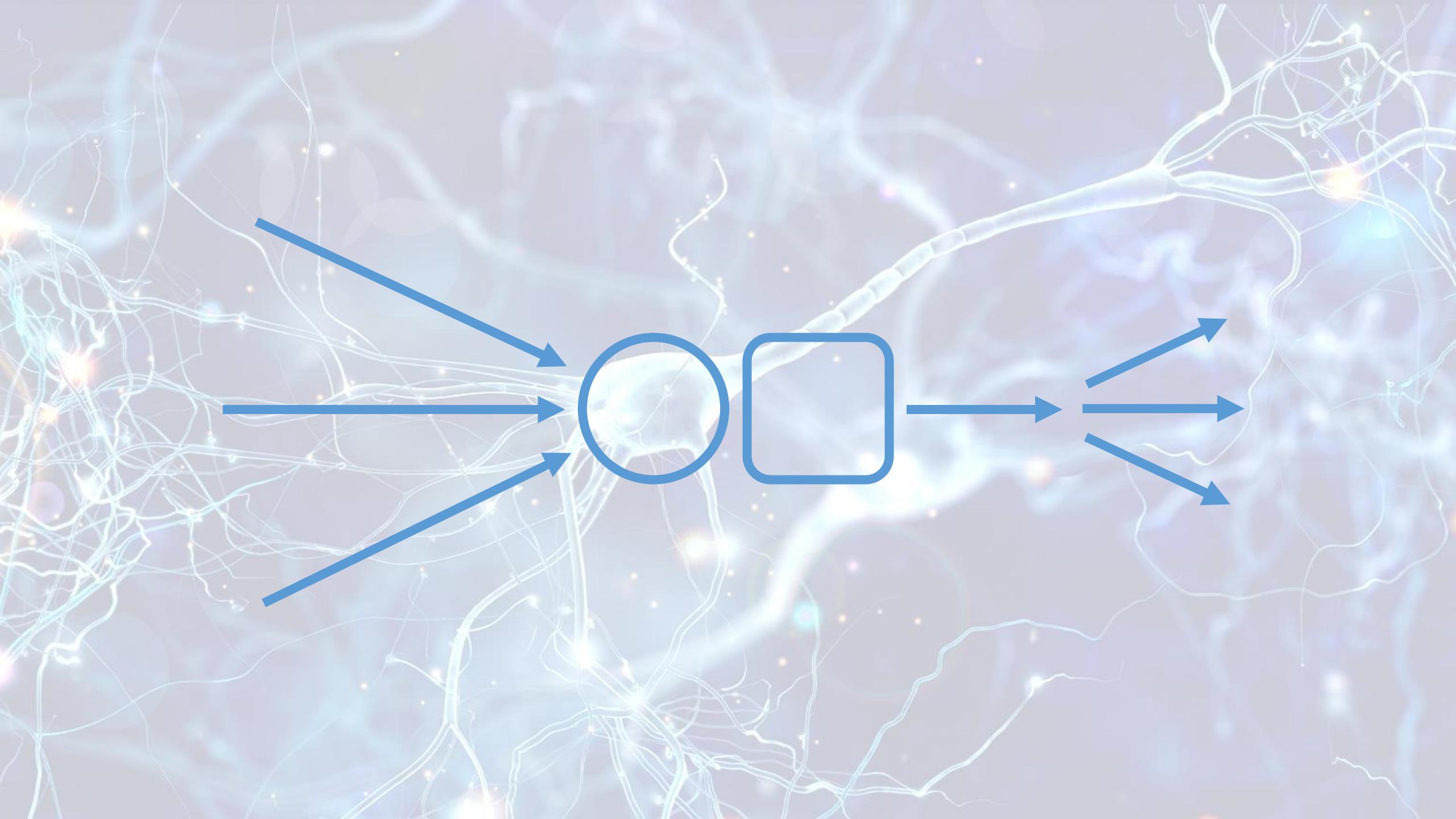


Yes

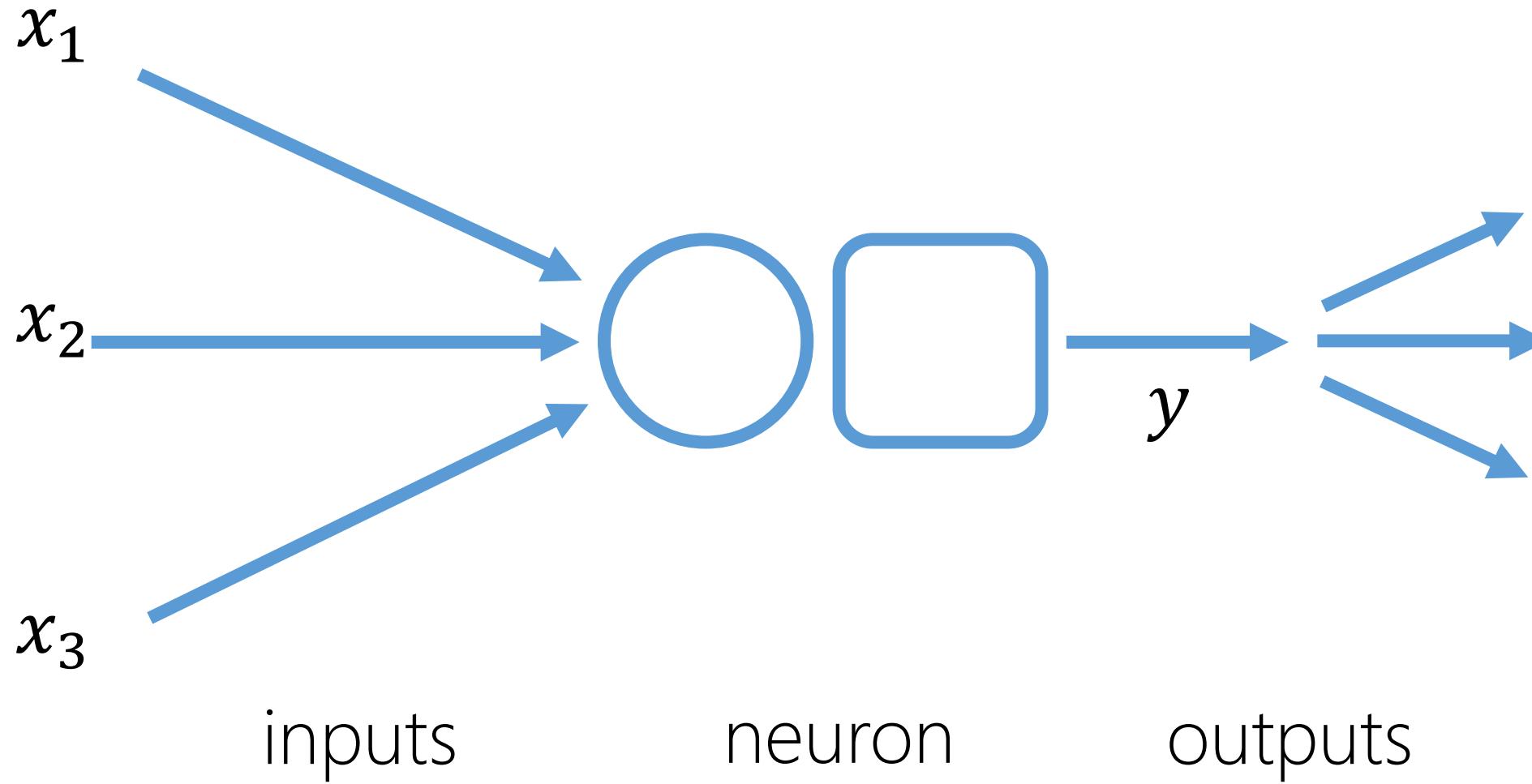




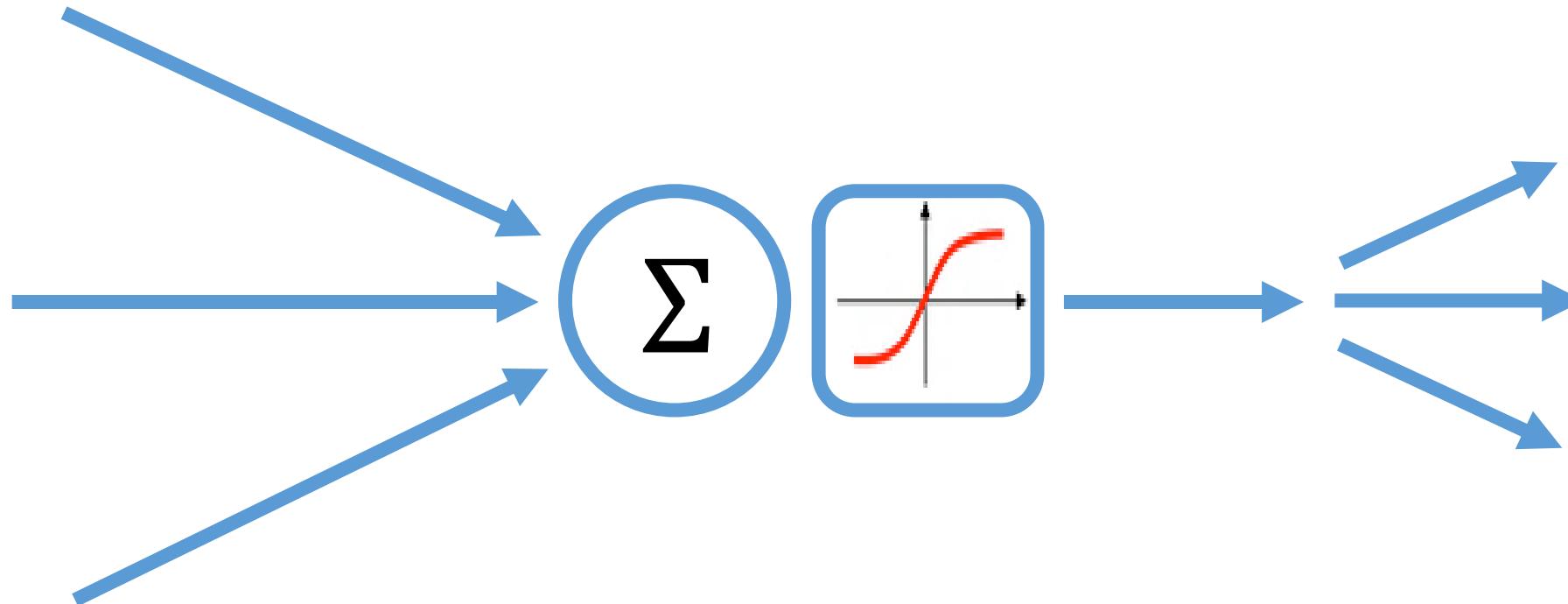




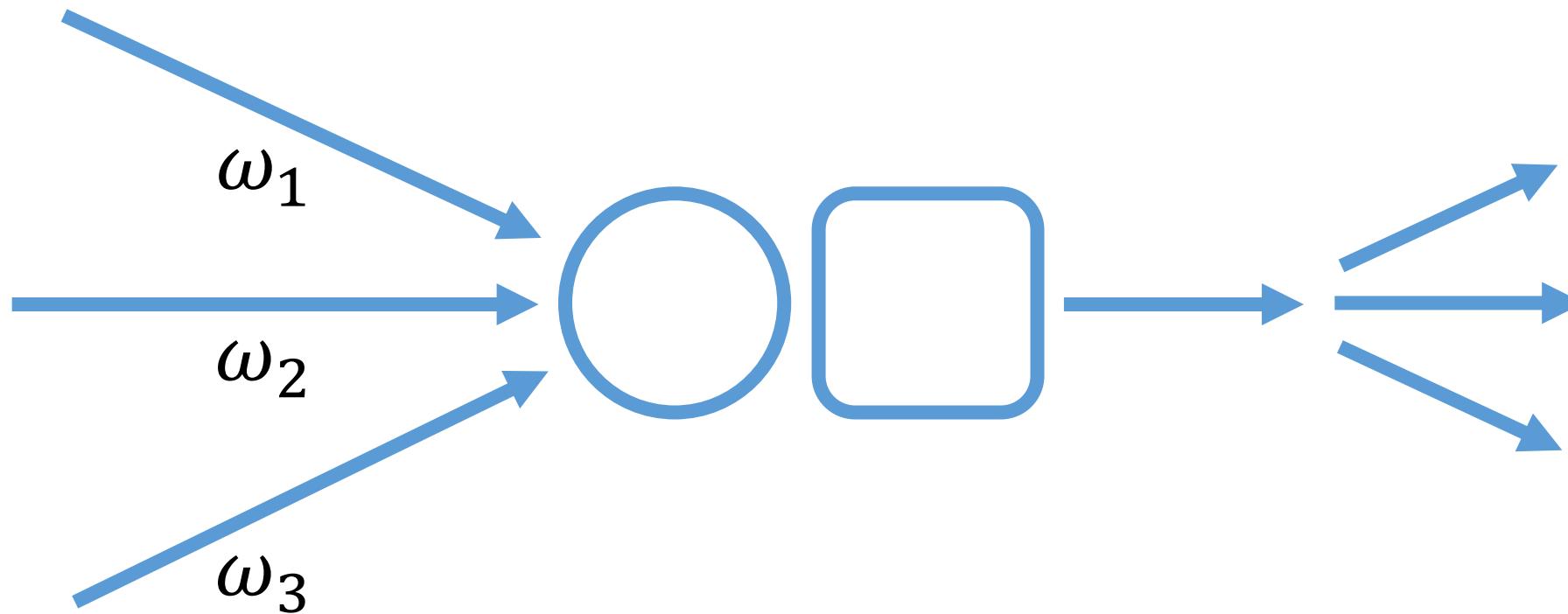
Artificial Neuron



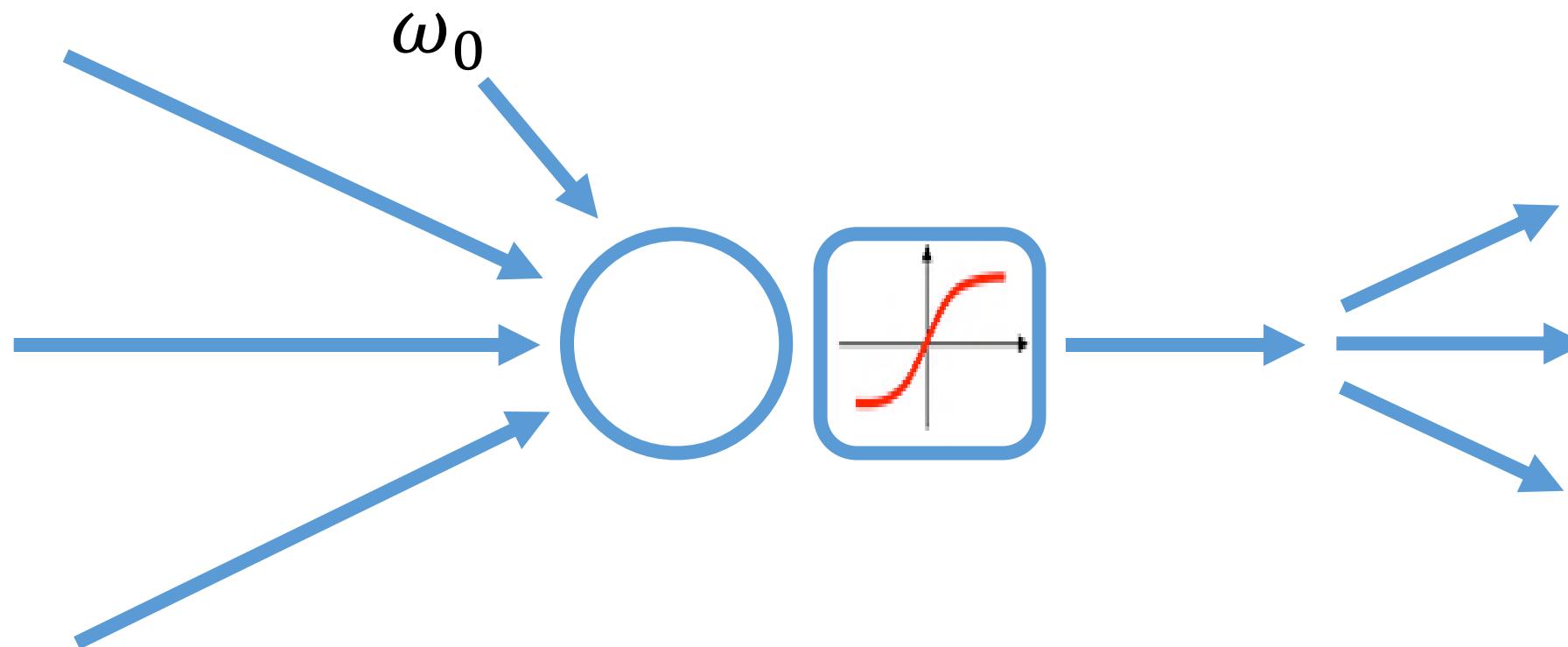
Artificial Neuron



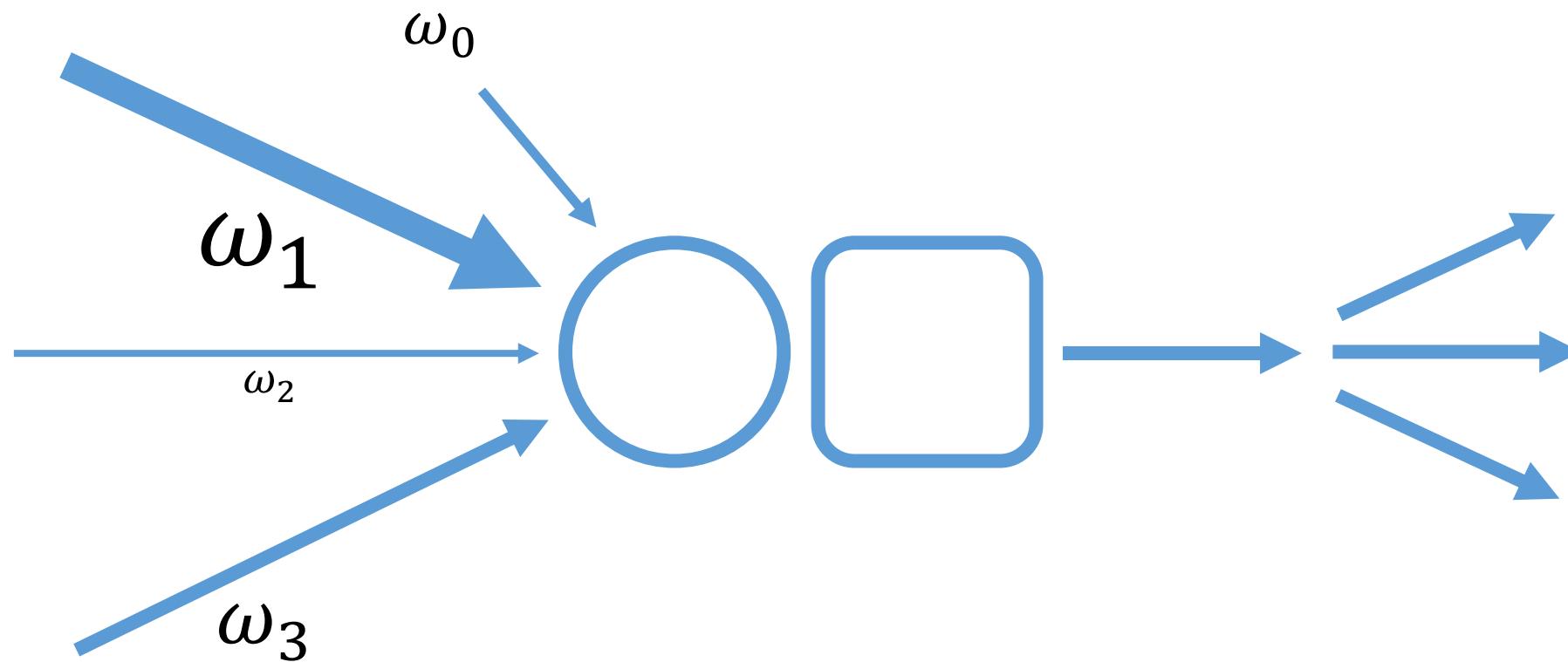
Artificial Neuron



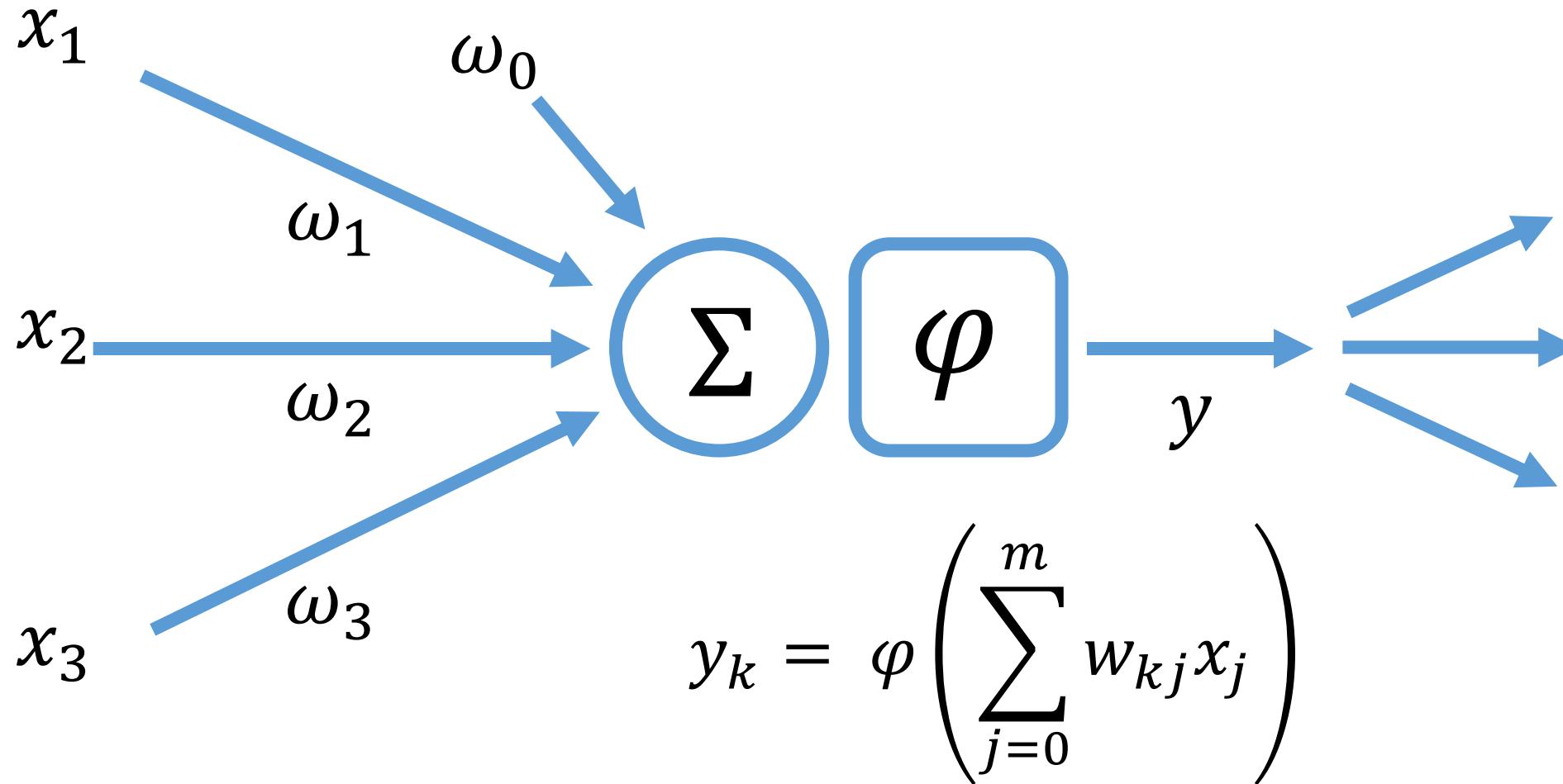
Artificial Neuron



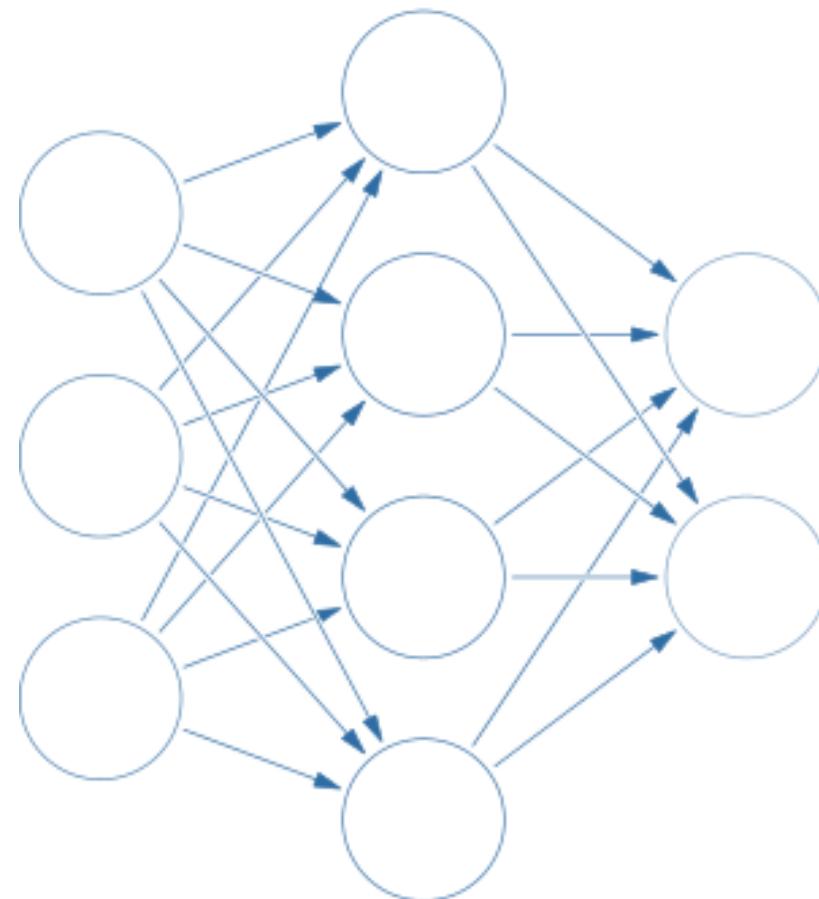
Artificial Neuron



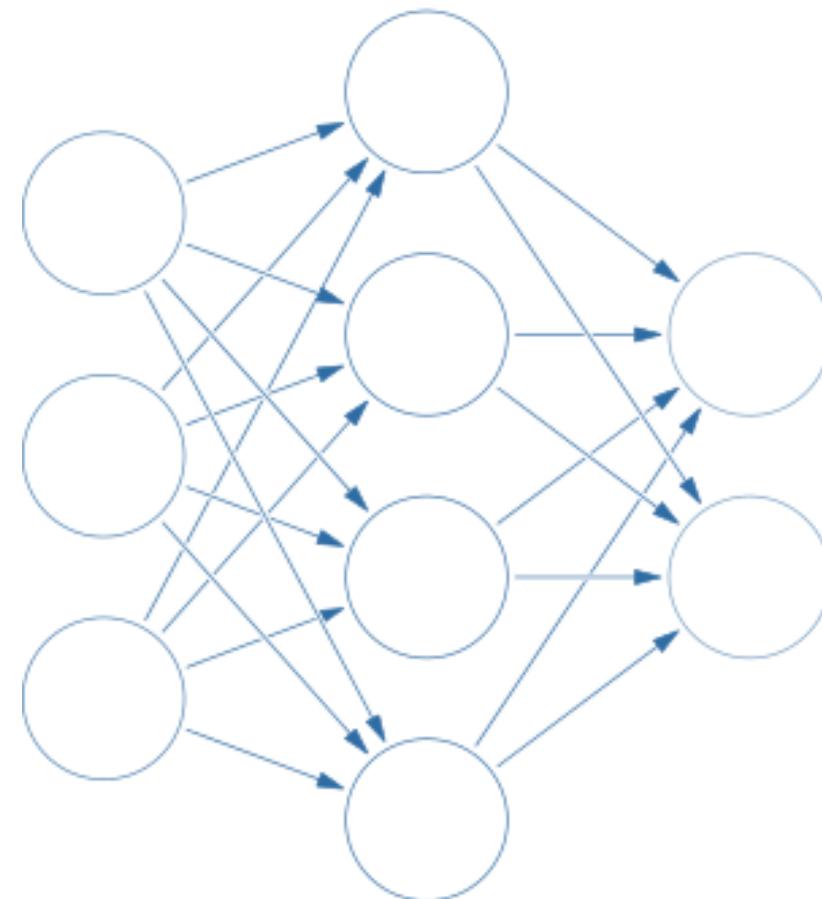
Artificial Neuron



Artificial Neural Network

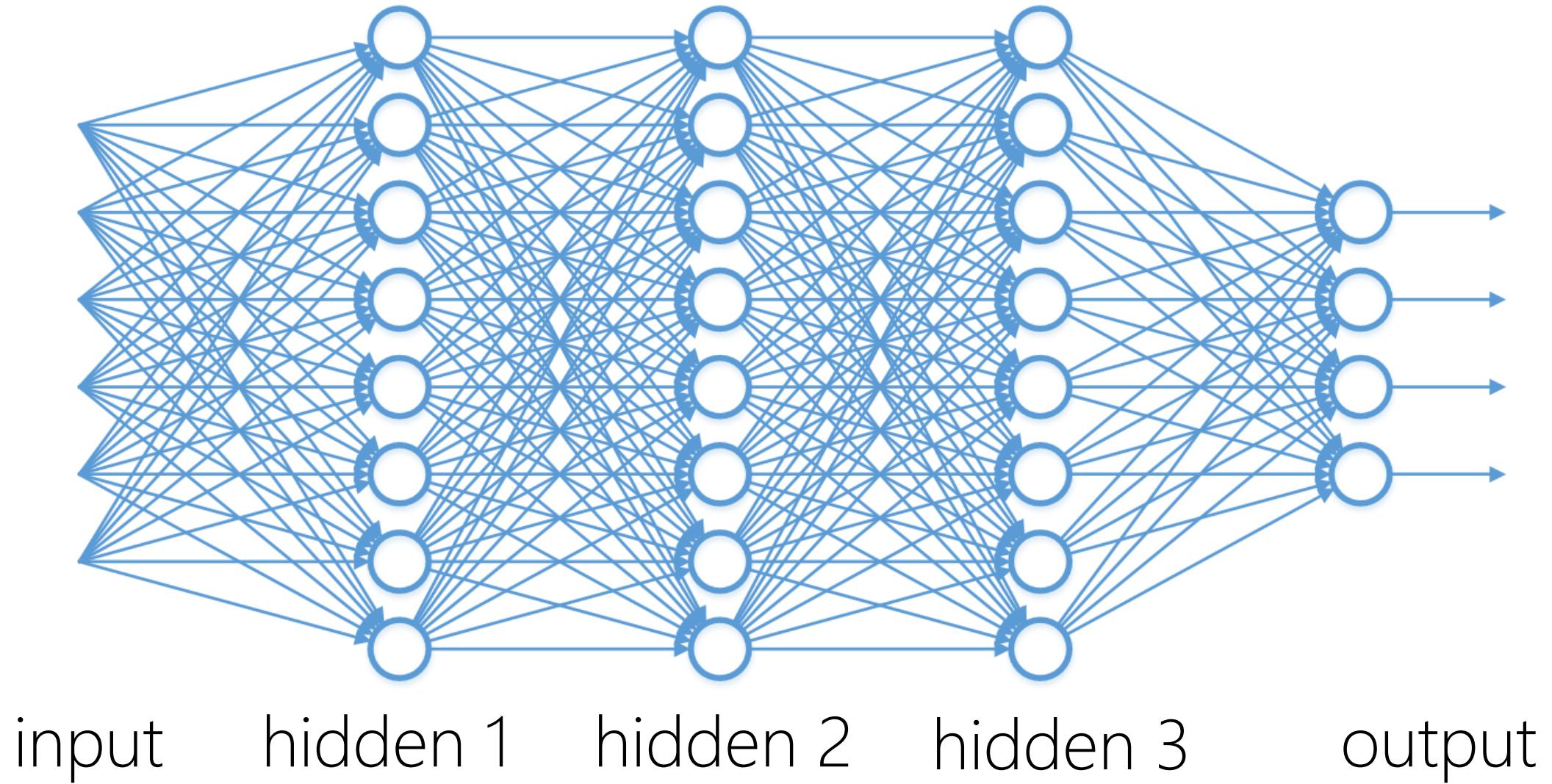


Artificial Neural Network

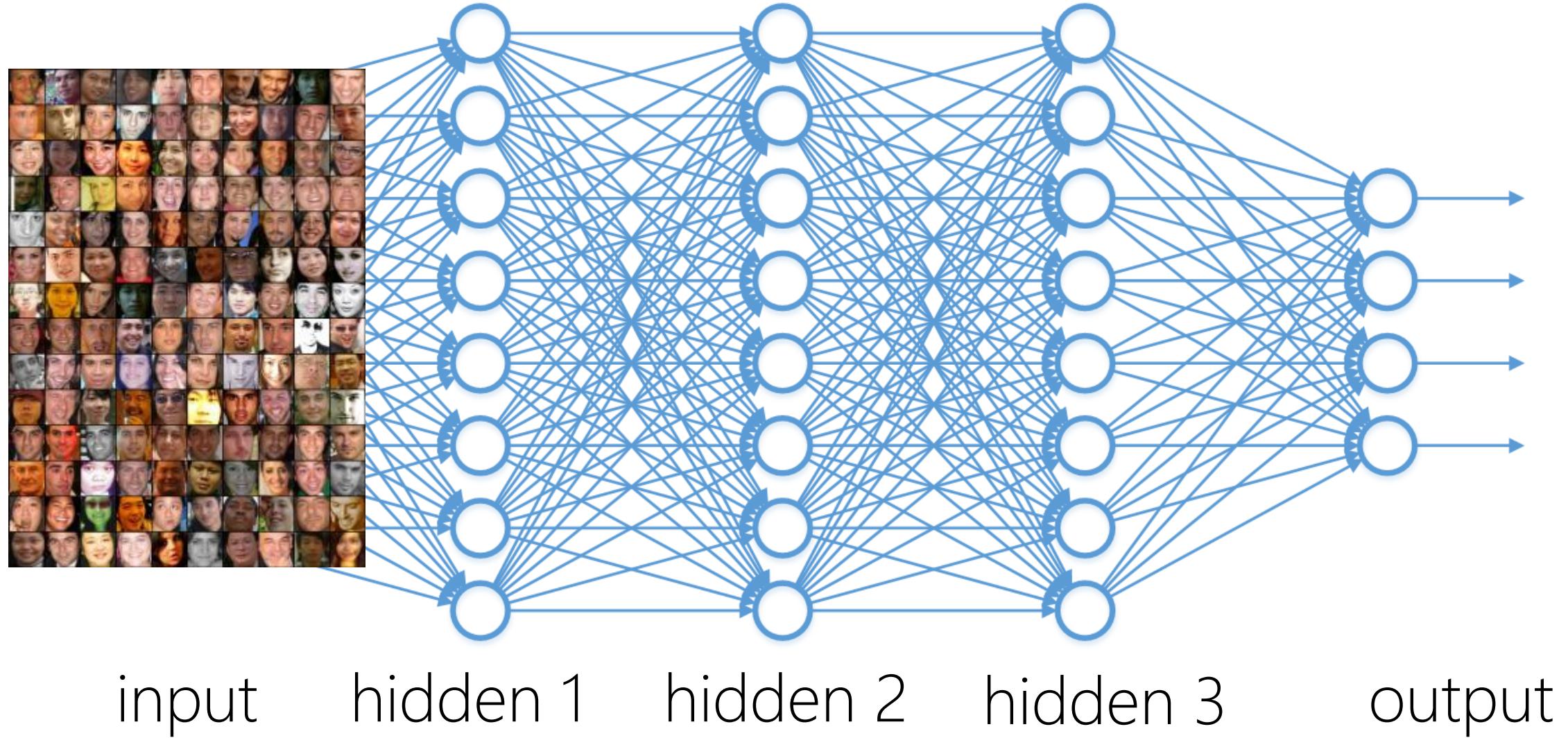


input hidden output

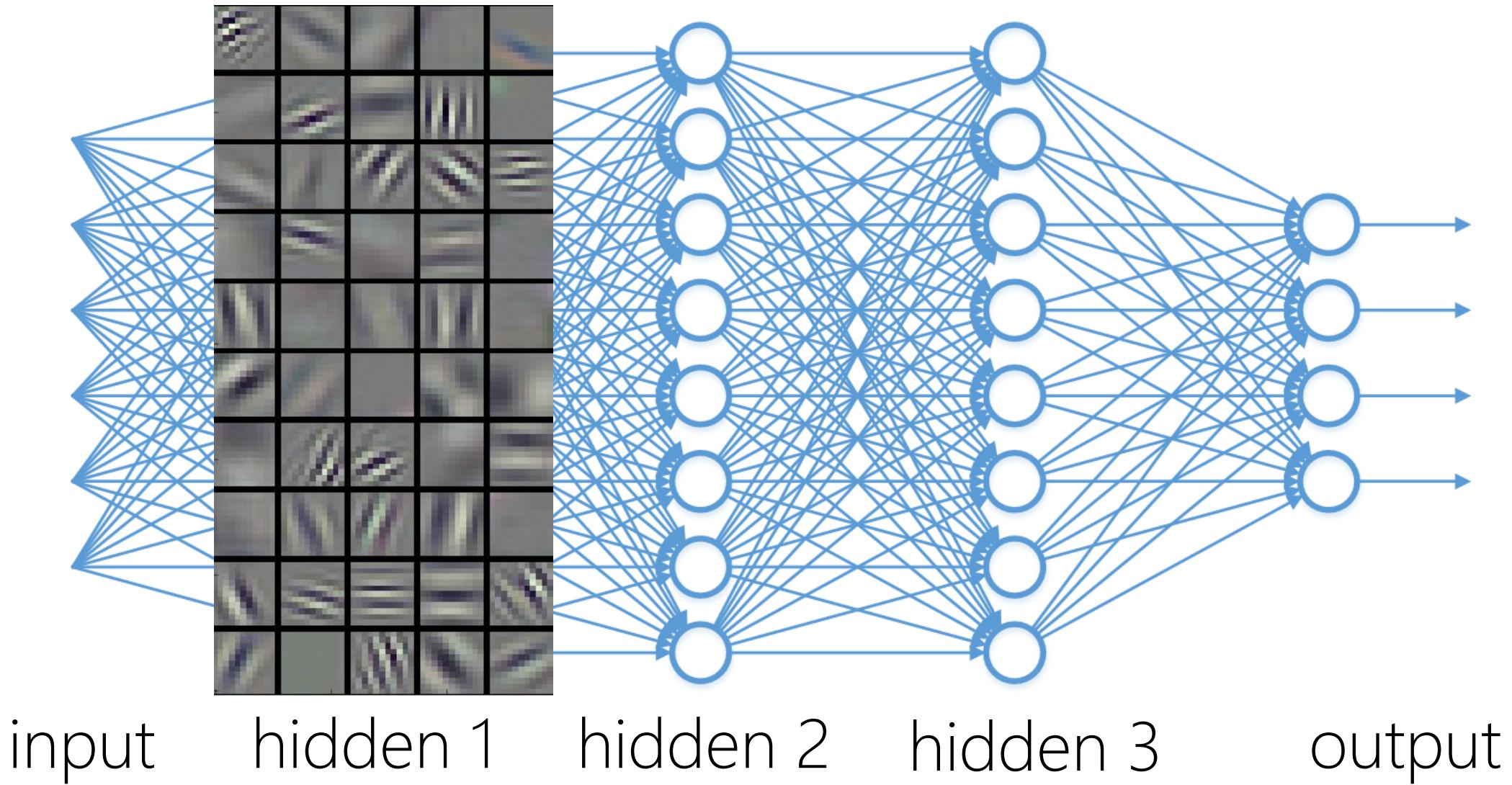
Deep Neural Network



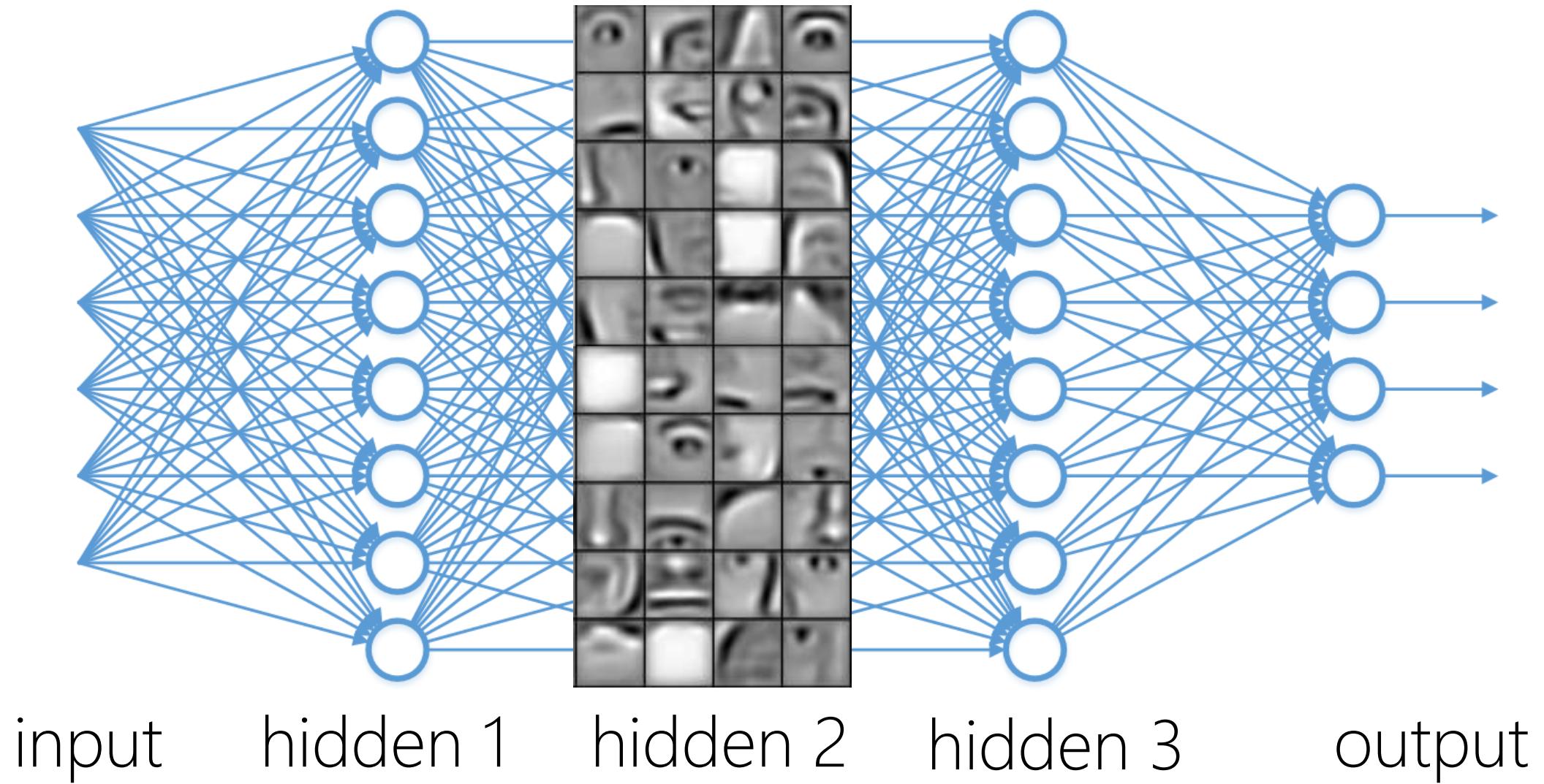
Deep Neural Network



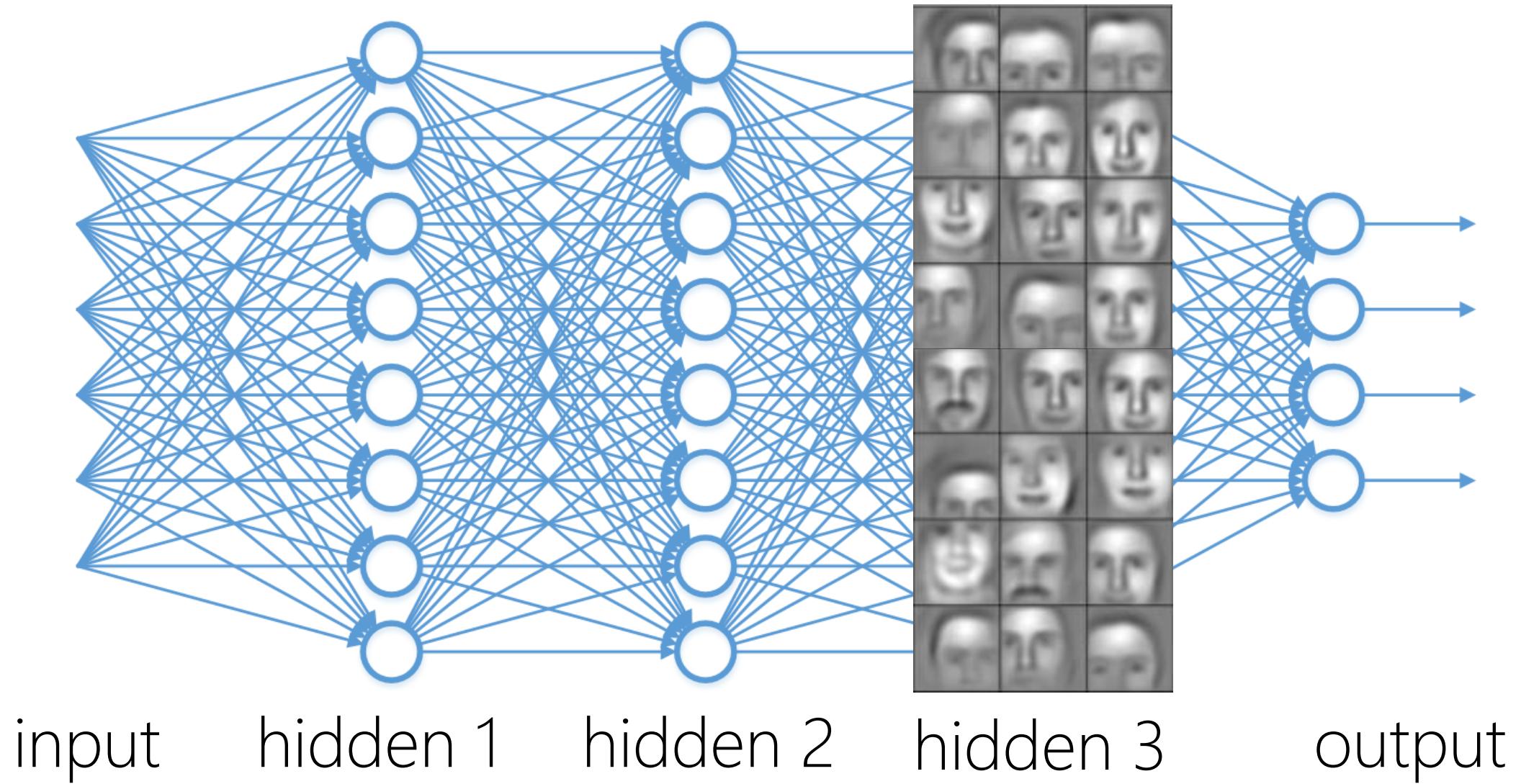
Deep Neural Network



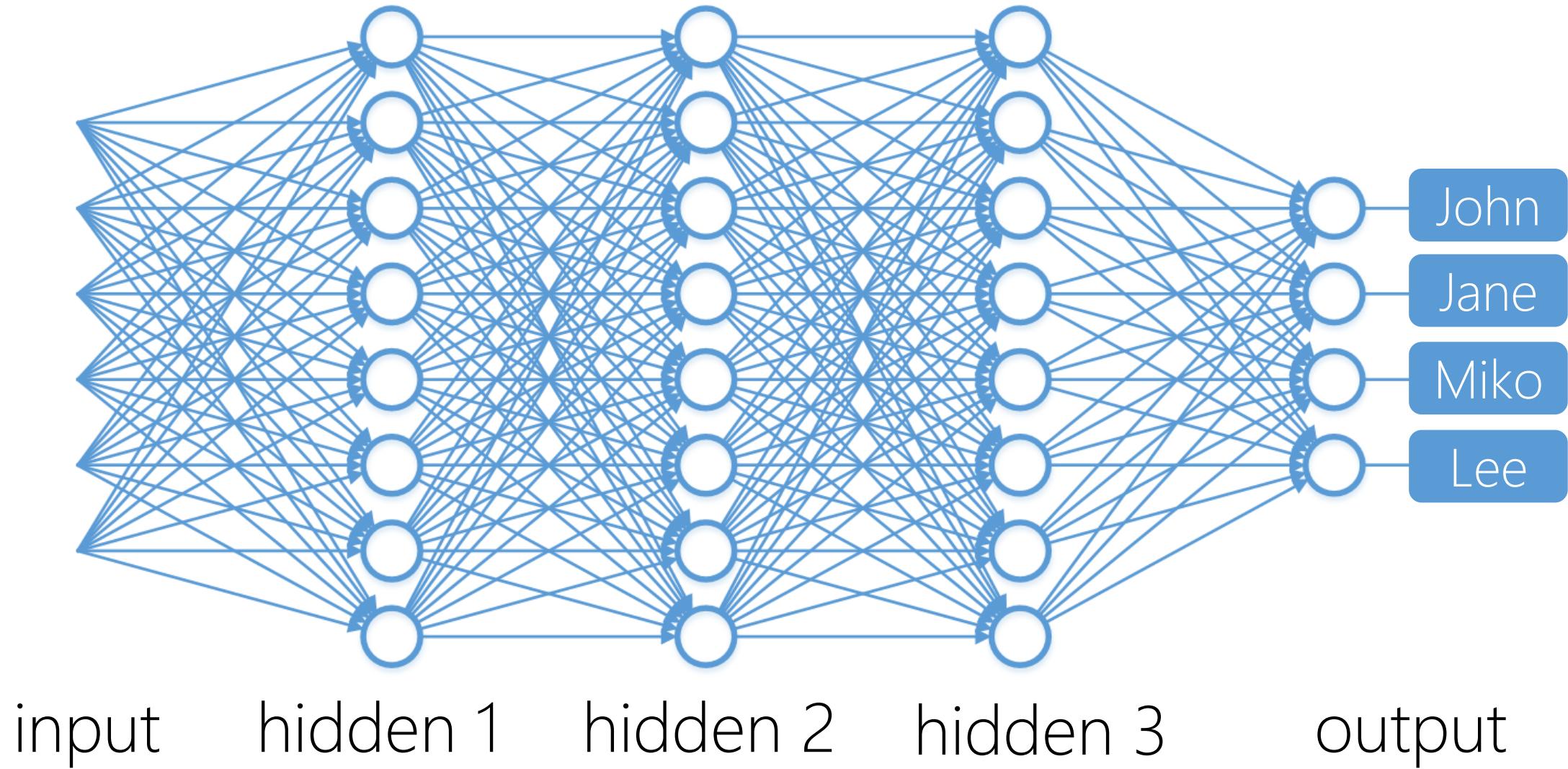
Deep Neural Network



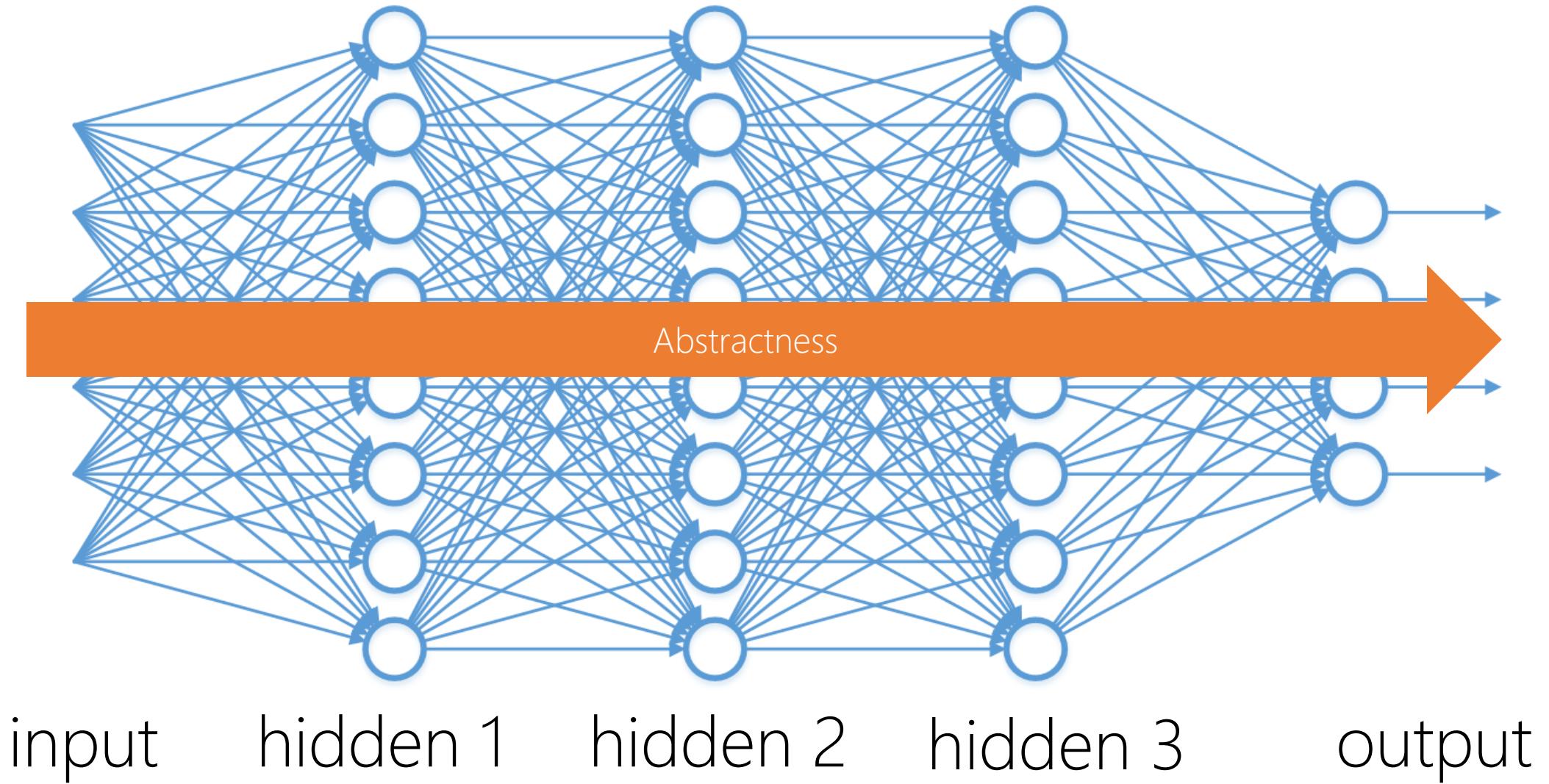
Deep Neural Network



Deep Neural Network



Deep Neural Network



Deep Learning

Artificial intelligence

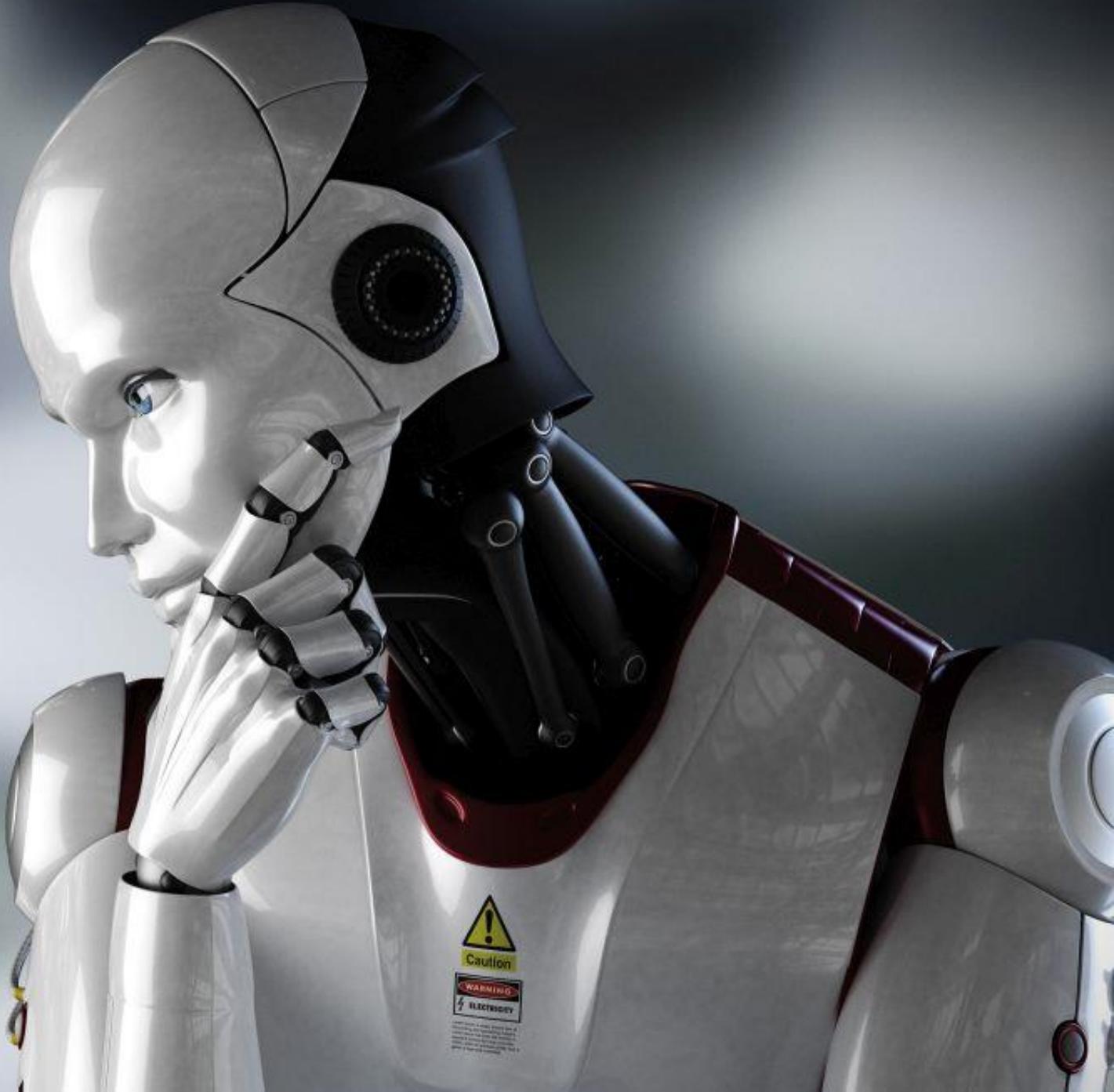
Machine learning

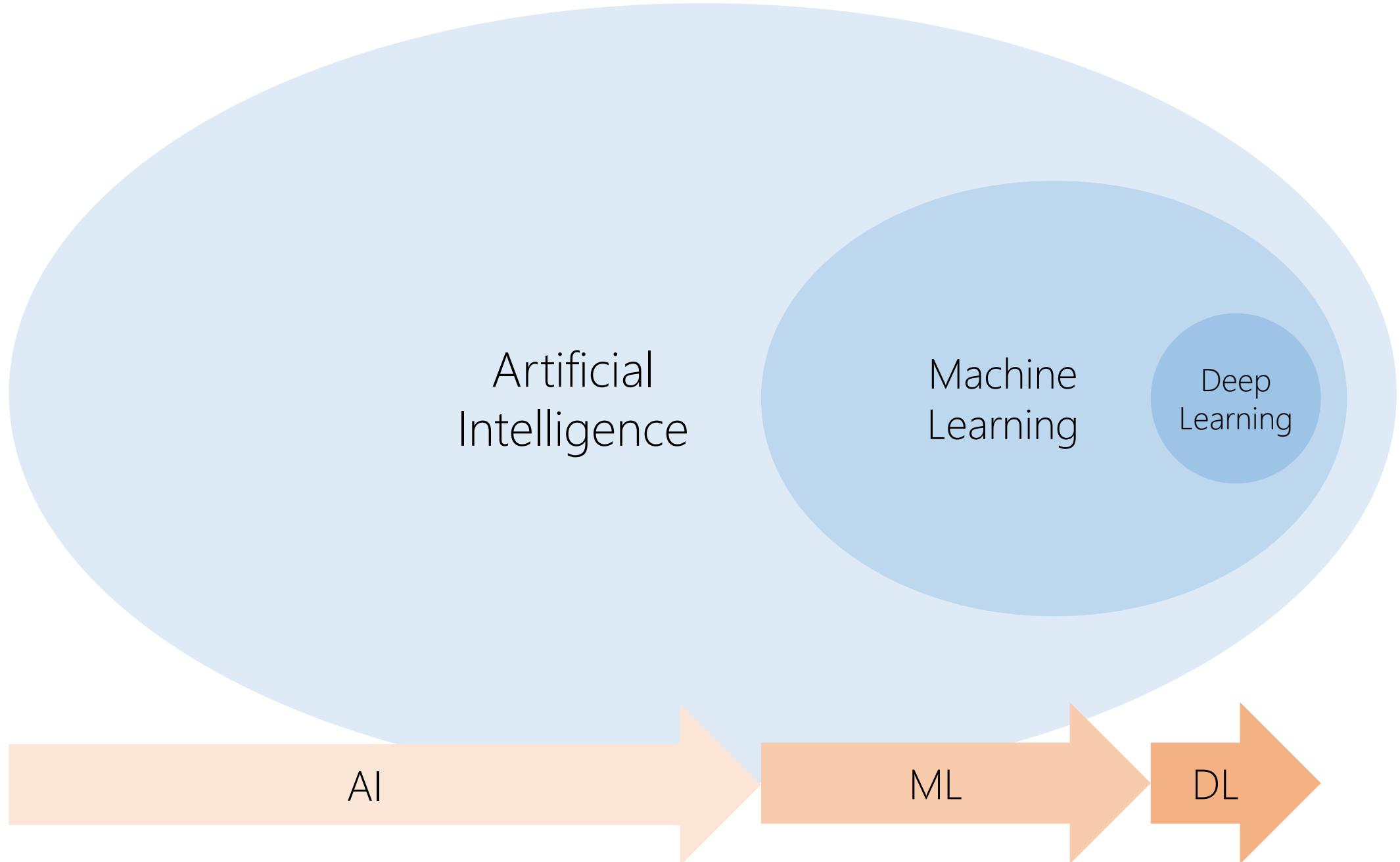
Neural network

Multiple hidden layers

Hierarchical representations

Makes predictions with data



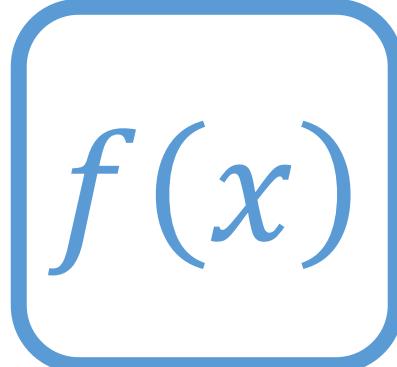
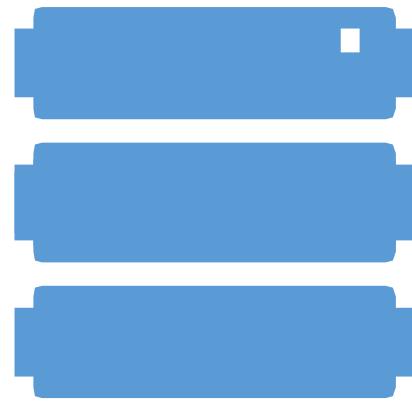
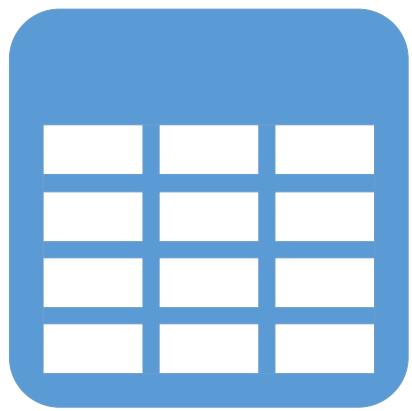


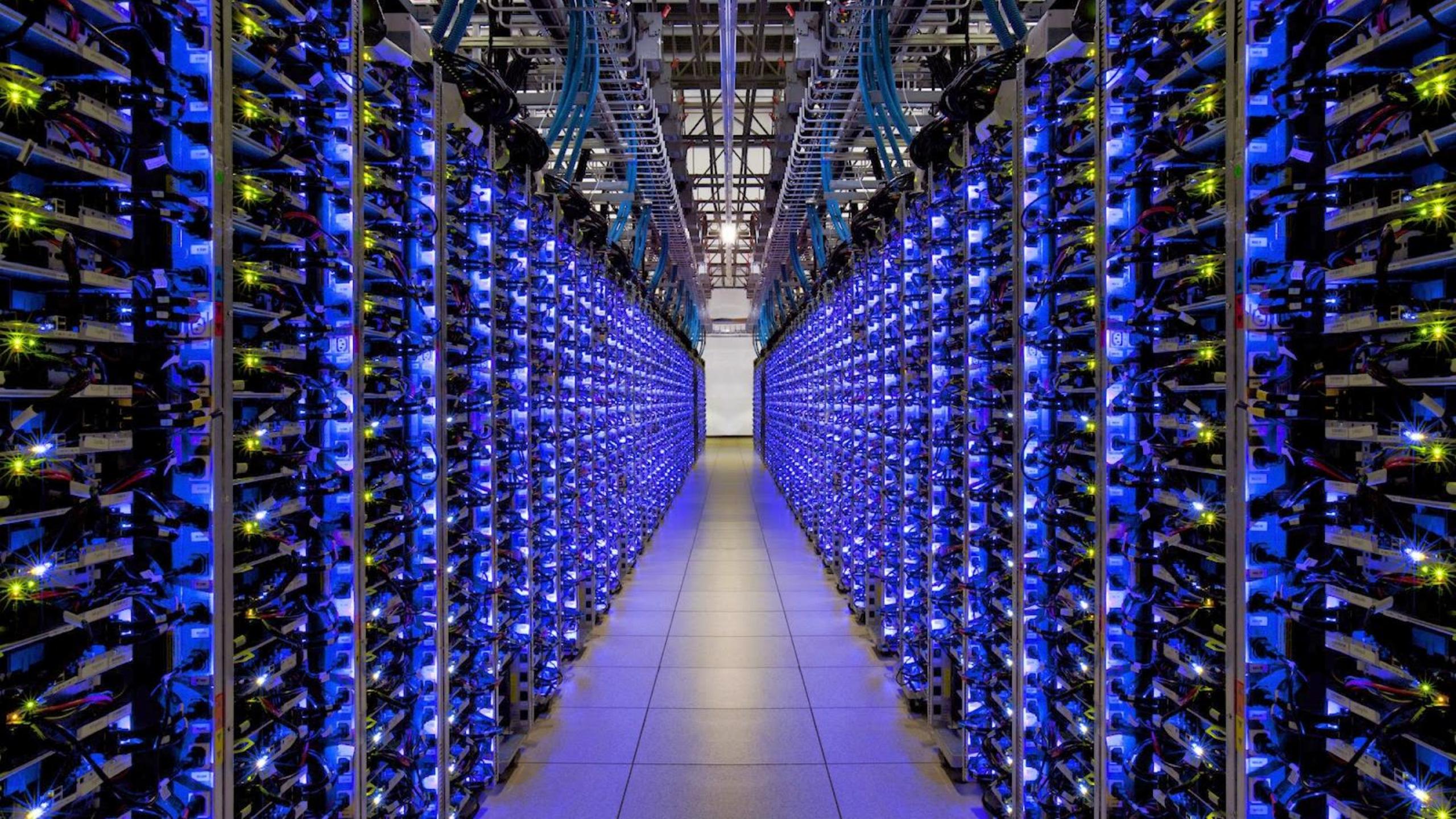


MARK 7

PERCEPTION

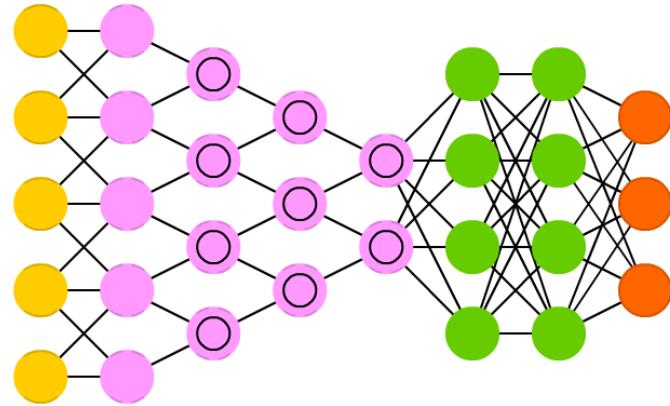
What Changed?

 $f(x)$ A blue rounded square icon containing the mathematical expression $f(x)$.

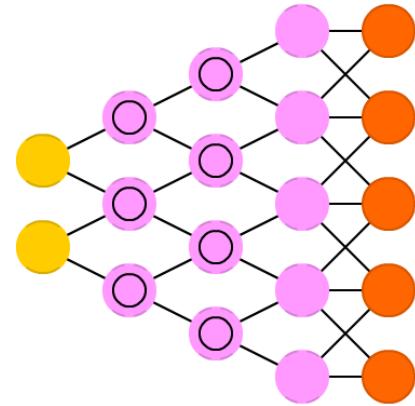




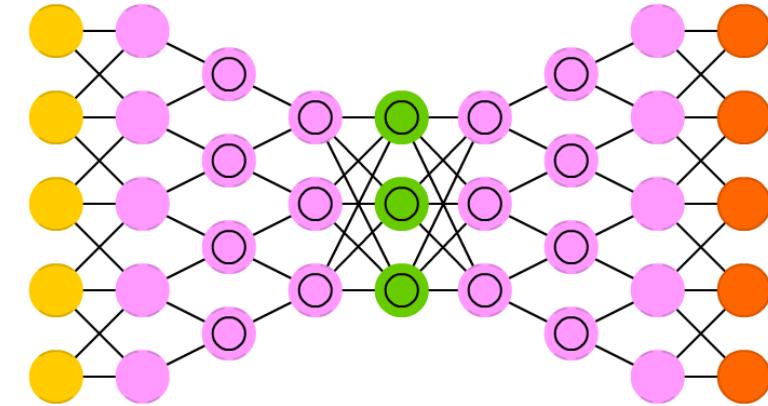
Deep Convolutional Network (DCN)



Deconvolutional Network (DN)

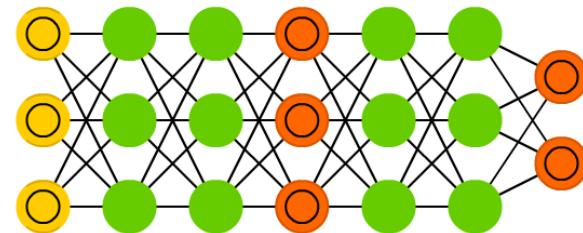


Deep Convolutional Inverse Graphics Network (DCIGN)

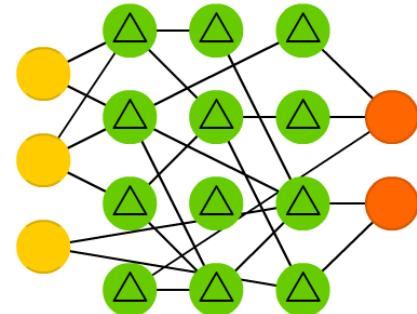


- Backfed Input Cell
- Input Cell
- △ Noisy Input Cell
- Hidden Cell
- Probabilistic Hidden Cell
- Spiking Hidden Cell
- Output Cell
- Match Input Output Cell
- Recurrent Cell
- Memory Cell
- △ Different Memory Cell
- Kernel
- Convolution or Pool

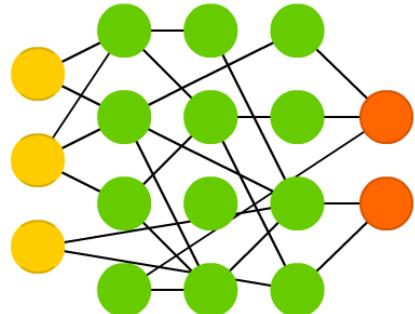
Generative Adversarial Network (GAN)



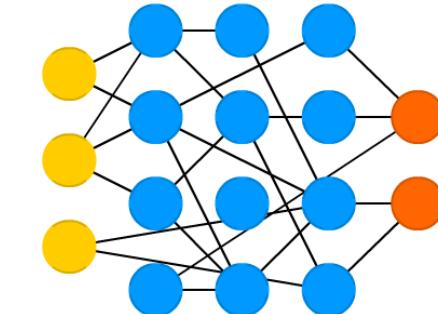
Liquid State Machine (LSM)



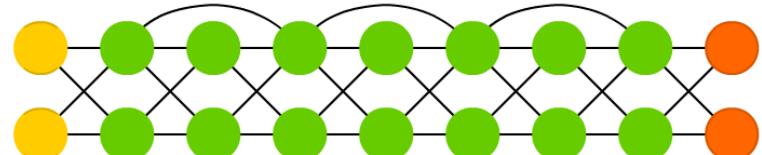
Extreme Learning Machine (ELM)



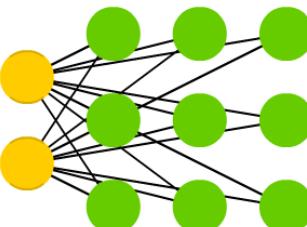
Echo State Network (ESN)



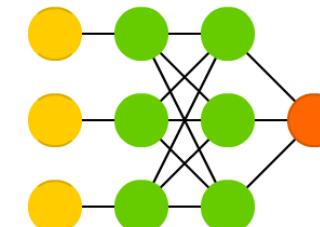
Deep Residual Network (DRN)



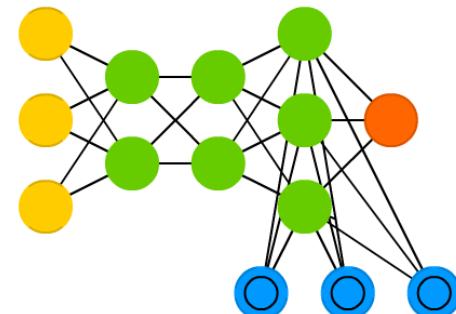
Kohonen Network (KN)



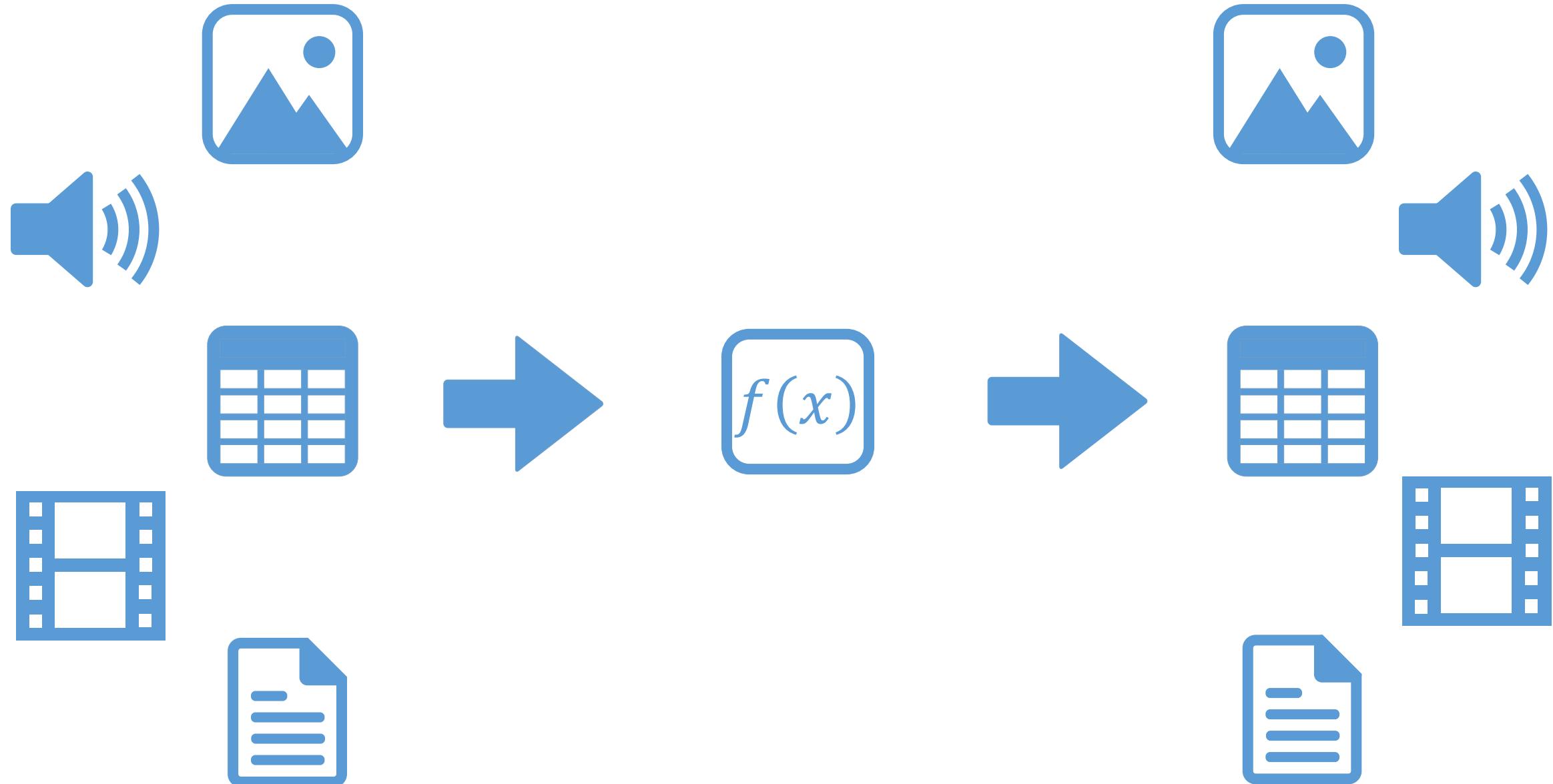
Support Vector Machine (SVM)

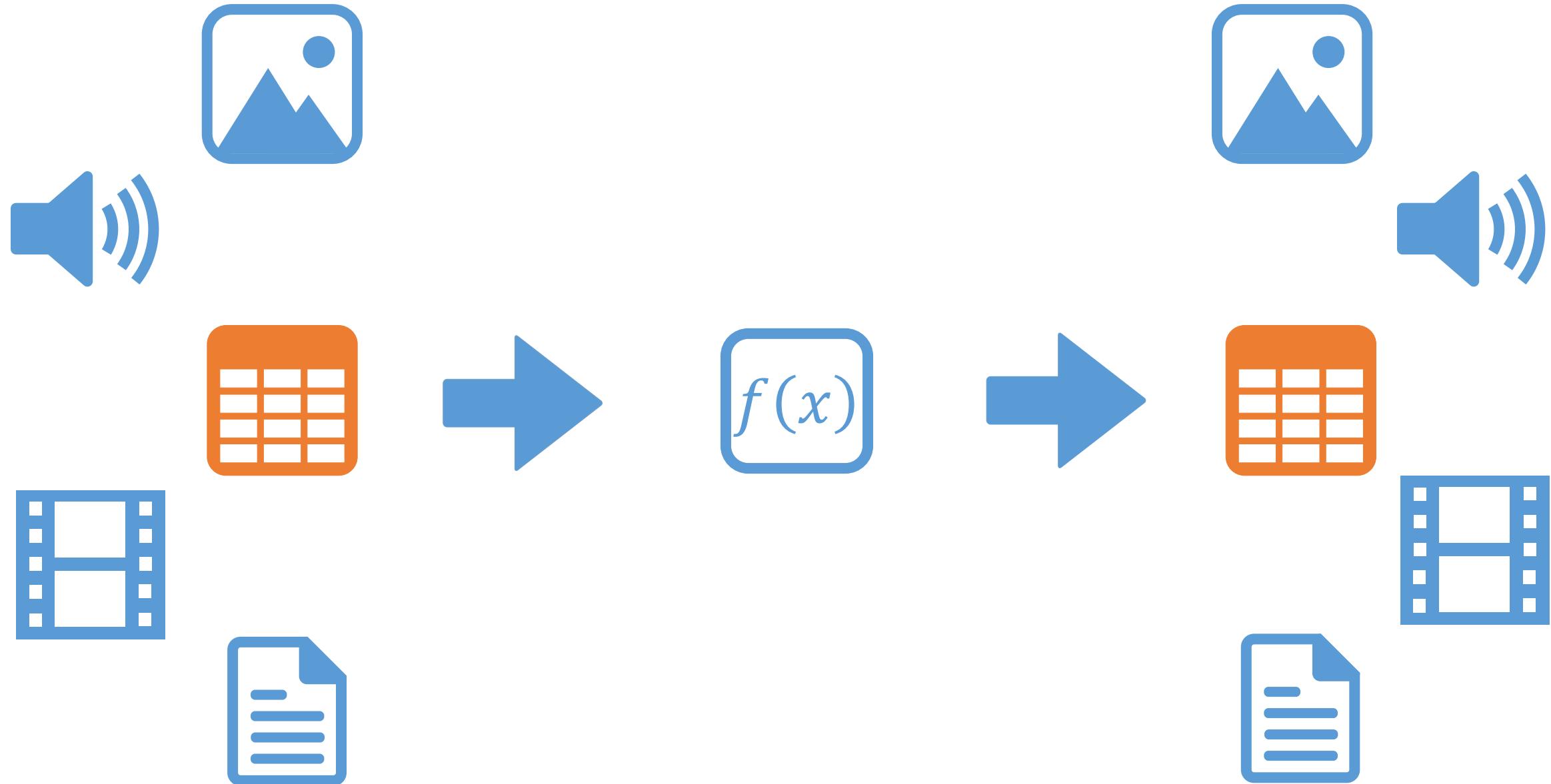


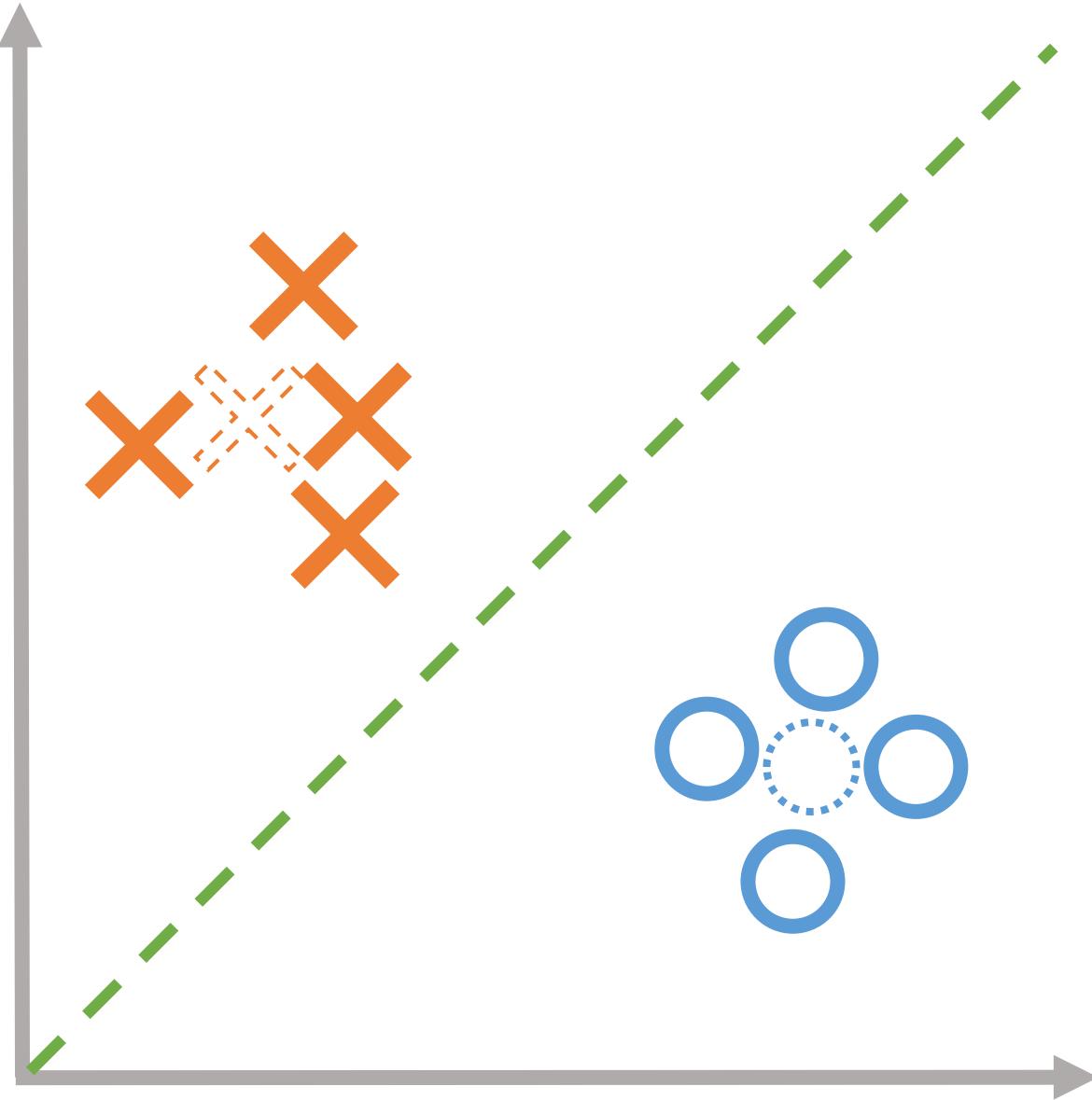
Neural Turing Machine (NTM)

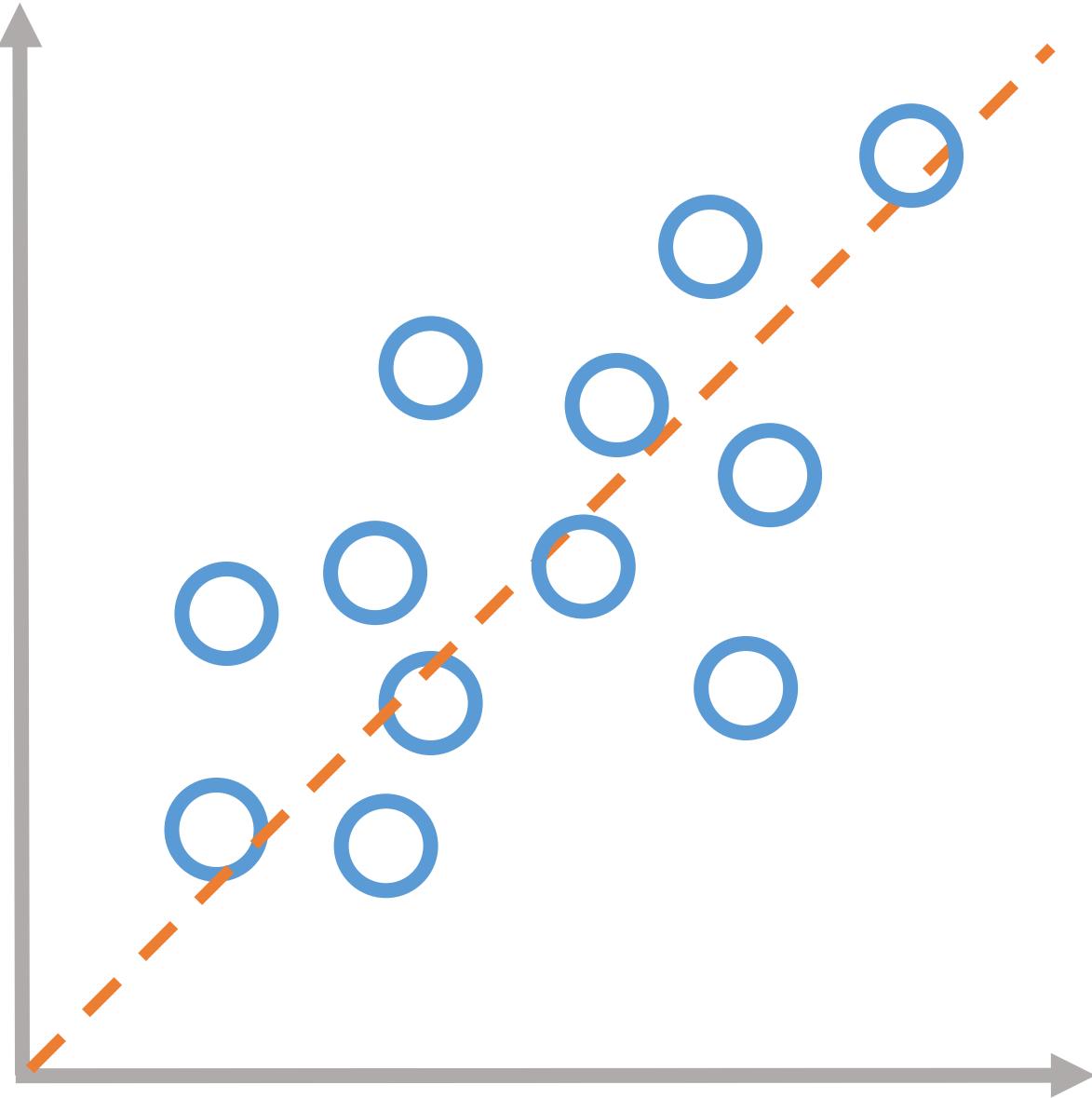


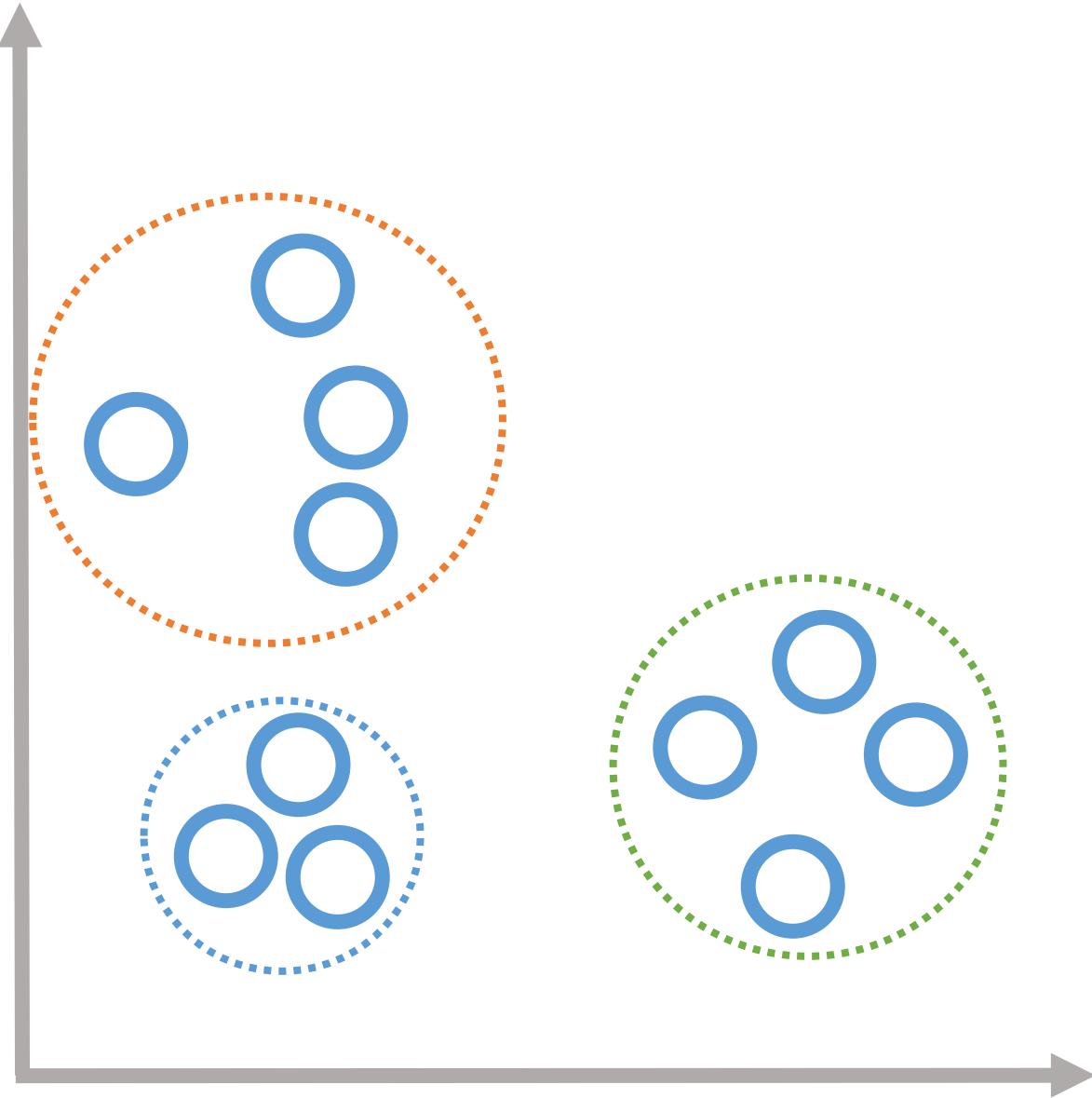
What can deep learning do?

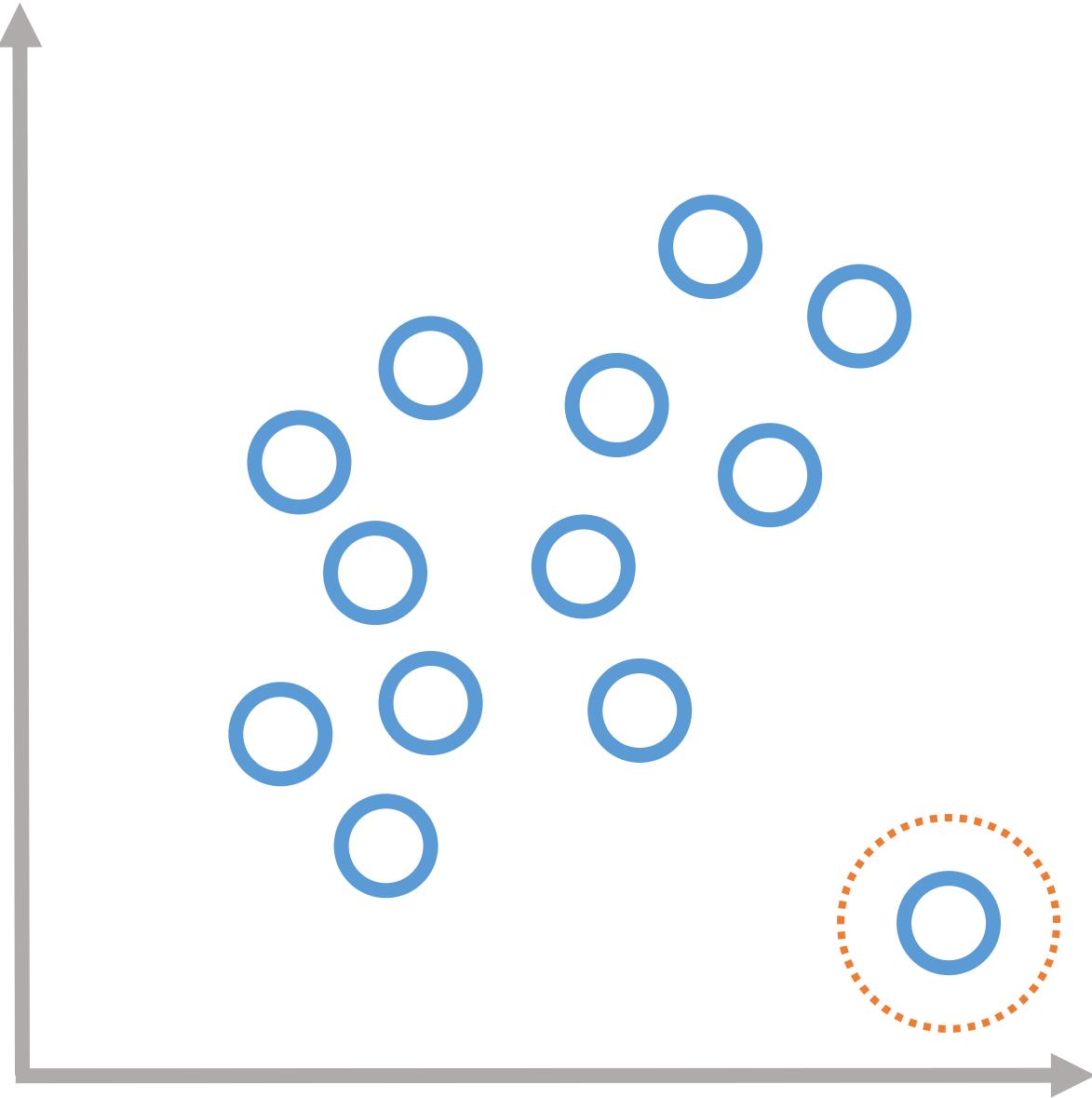


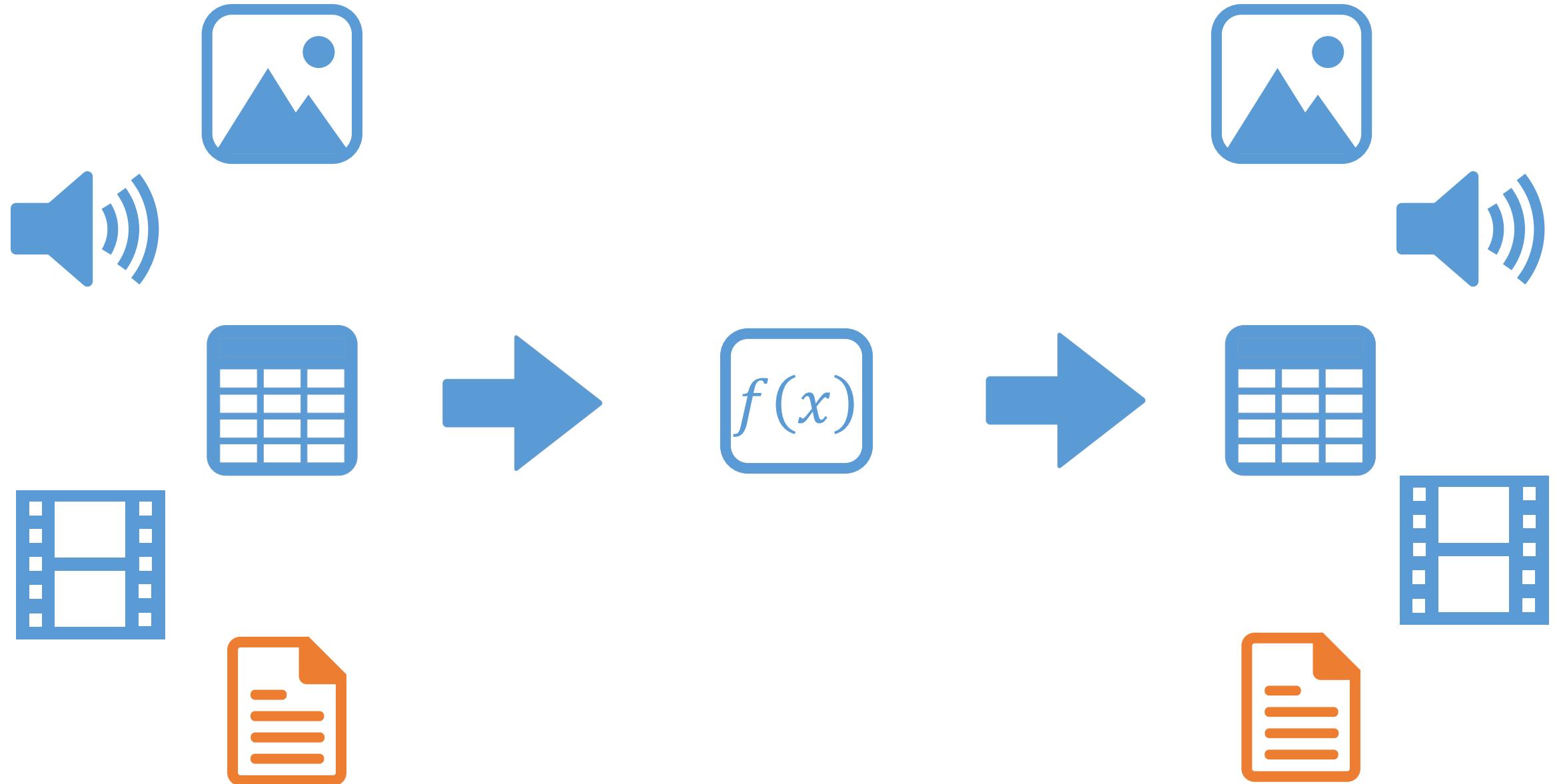


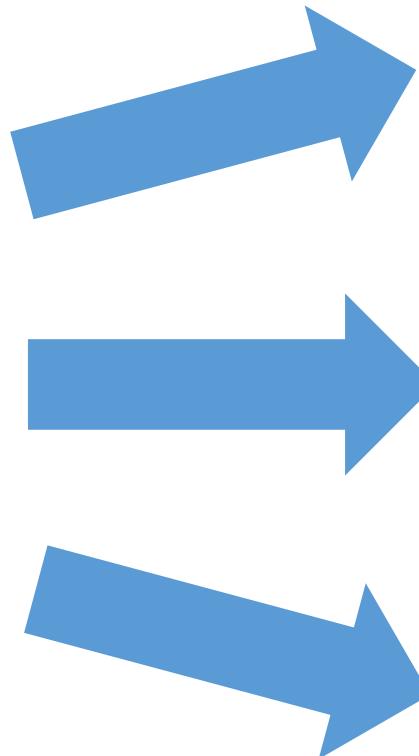












Technology

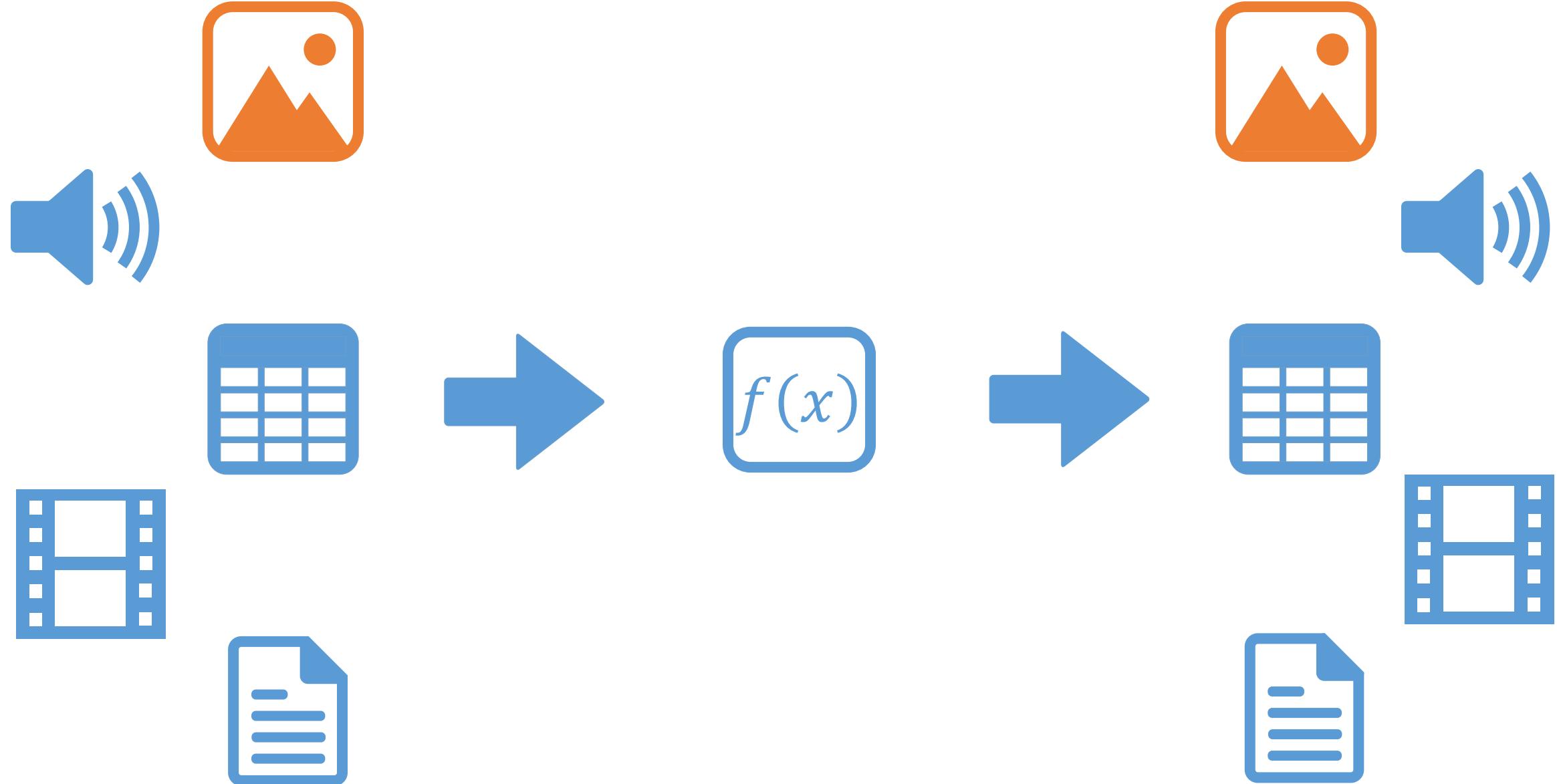


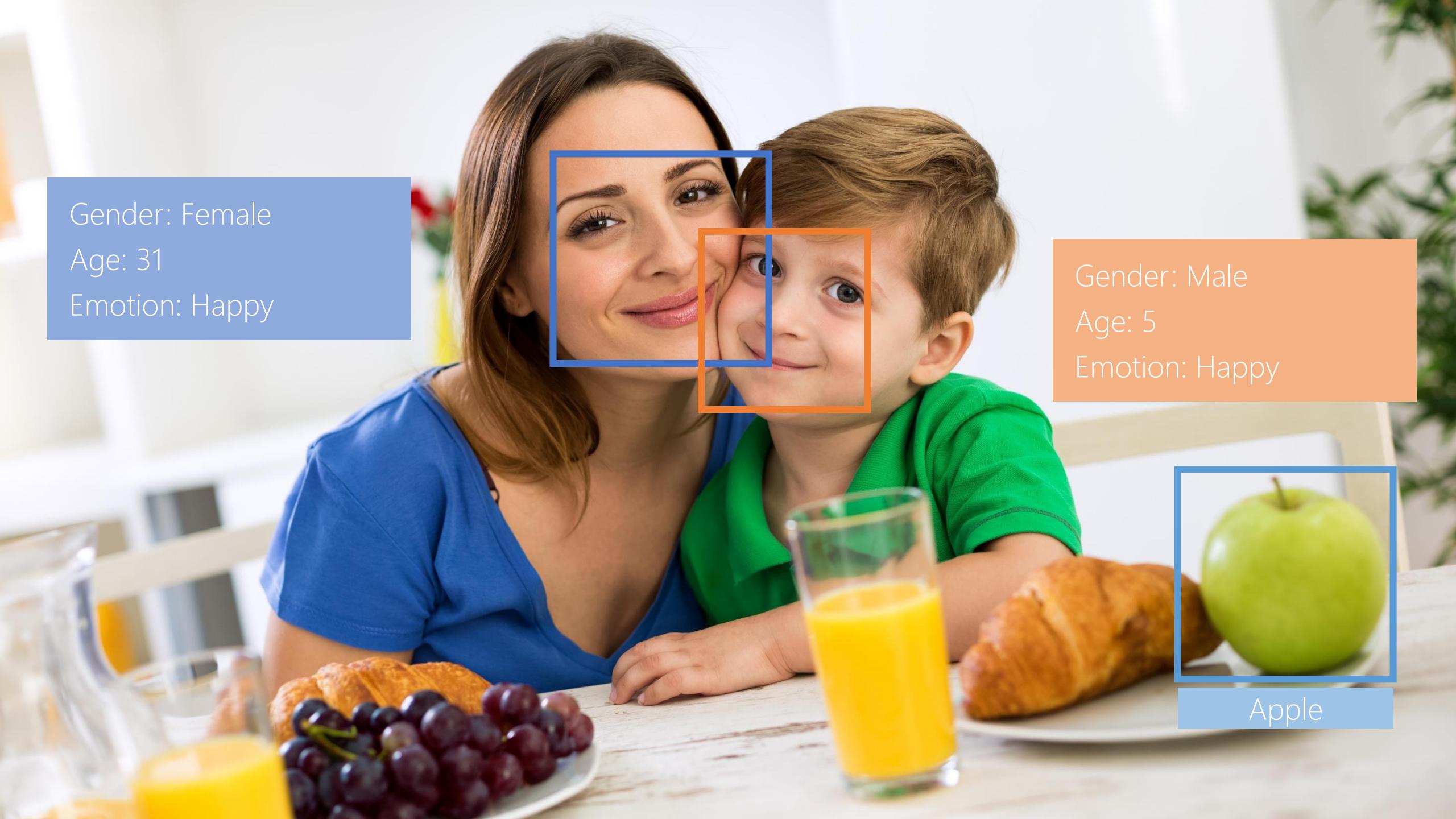
Sports



Entertainment

Article Text	Predicted Headline
At least 72 people died and scores more were hurt when a truck crowded with pilgrims plunged into a gorge in the desert state of Rajasthan on Friday, police told the press trust of India.	At least 72 dead in Indian road accident
One of the last remaining routes for Iraqis trying to flee their country has effectively been closed off by new visa restrictions imposed by Syria, the U. N. refugee agency said Tuesday.	U.N. refugee agency closes last routes to Iraq
Democratic presidential candidates said Thursday they would step up pressure on Pakistan's president Pervez Musharraf over democracy, and criticized White House policy towards Islamabad.	Democratic presidential hopefuls call for pressure on Musharraf





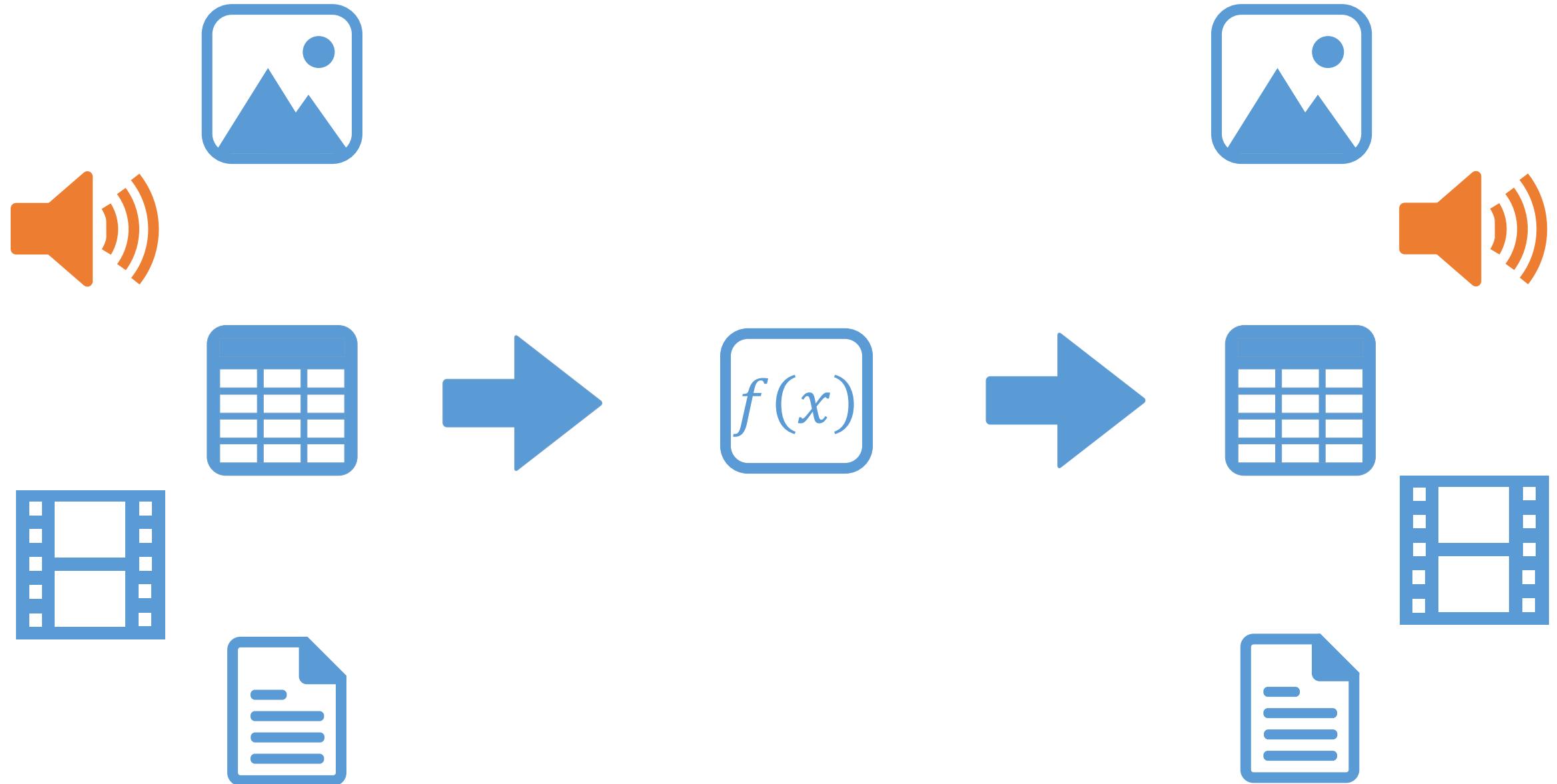
Gender: Female
Age: 31
Emotion: Happy

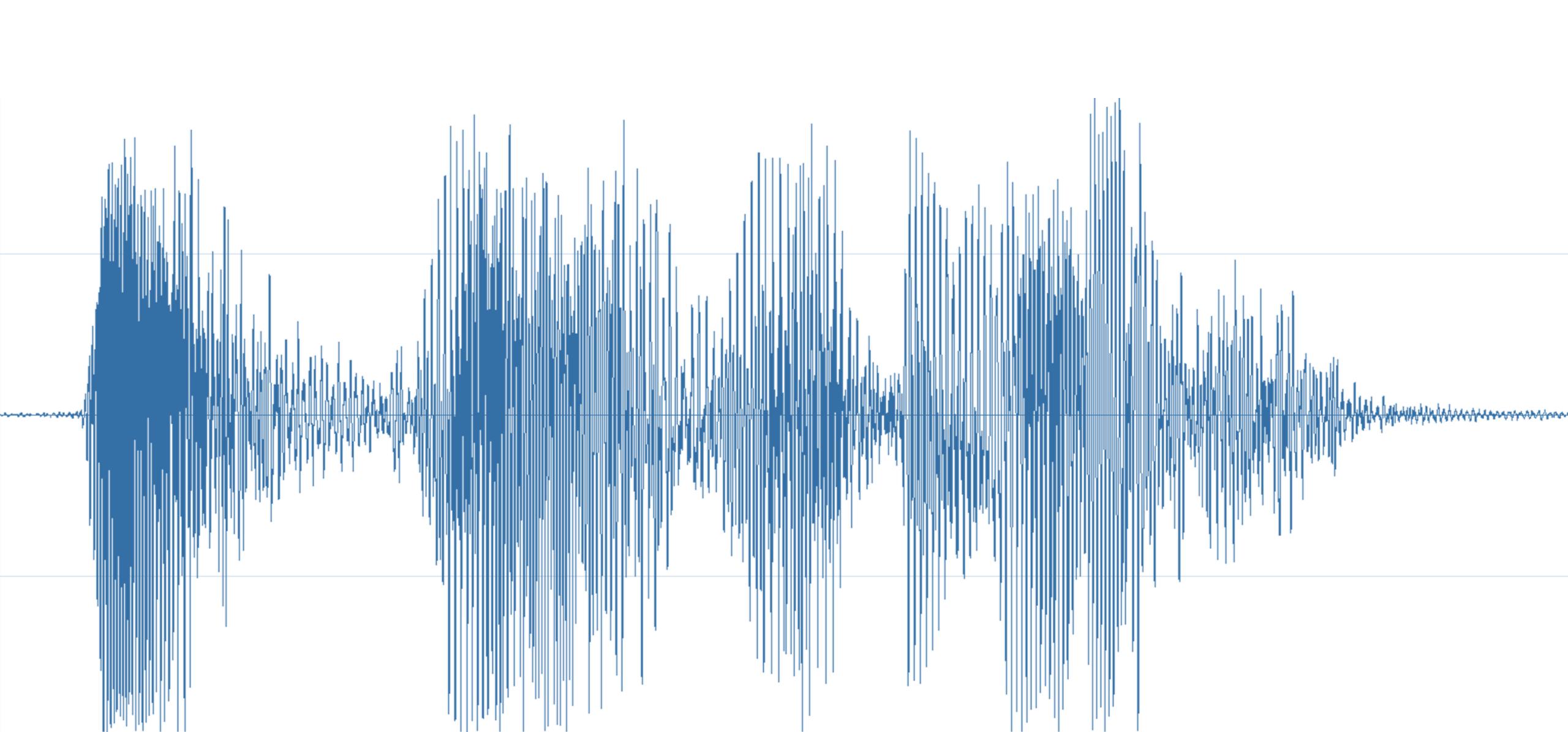
Gender: Male
Age: 5
Emotion: Happy



Apple





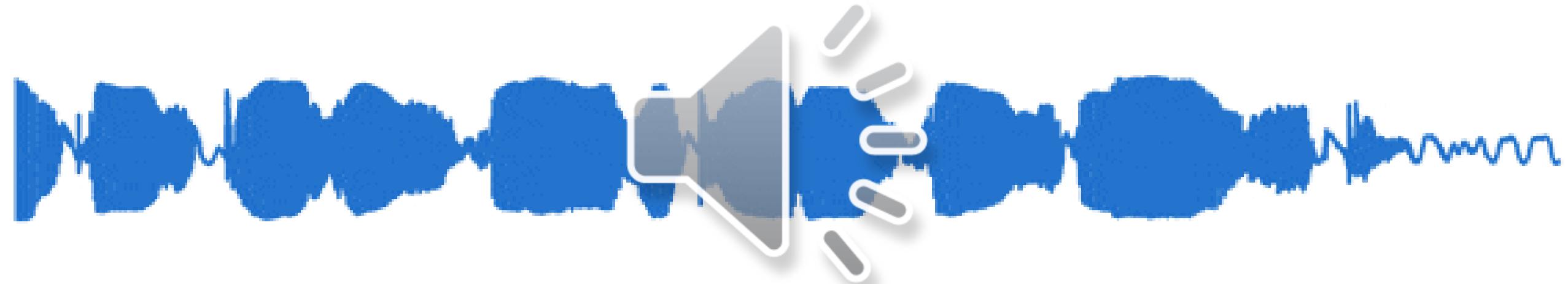


Hi

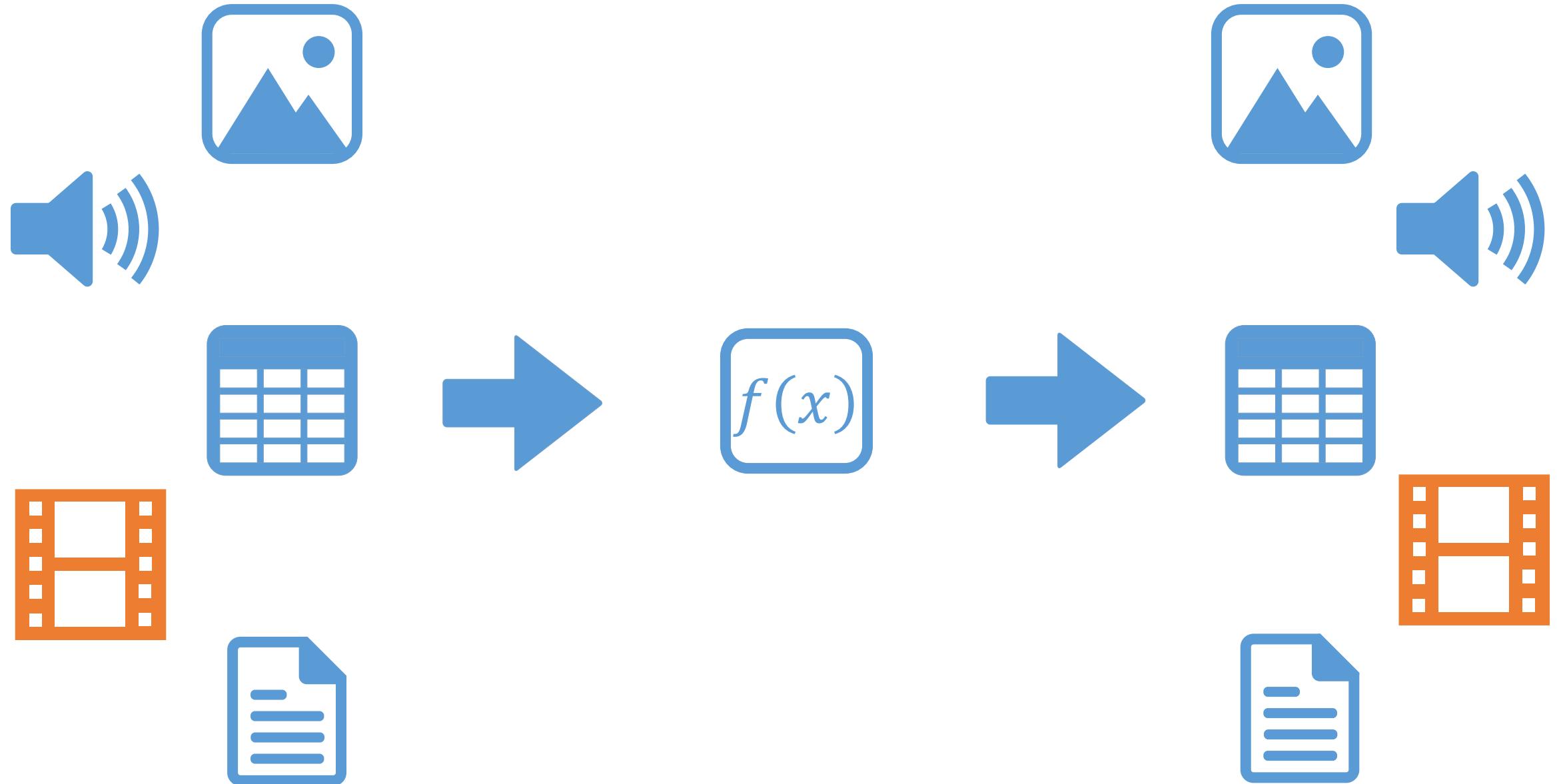
my name is

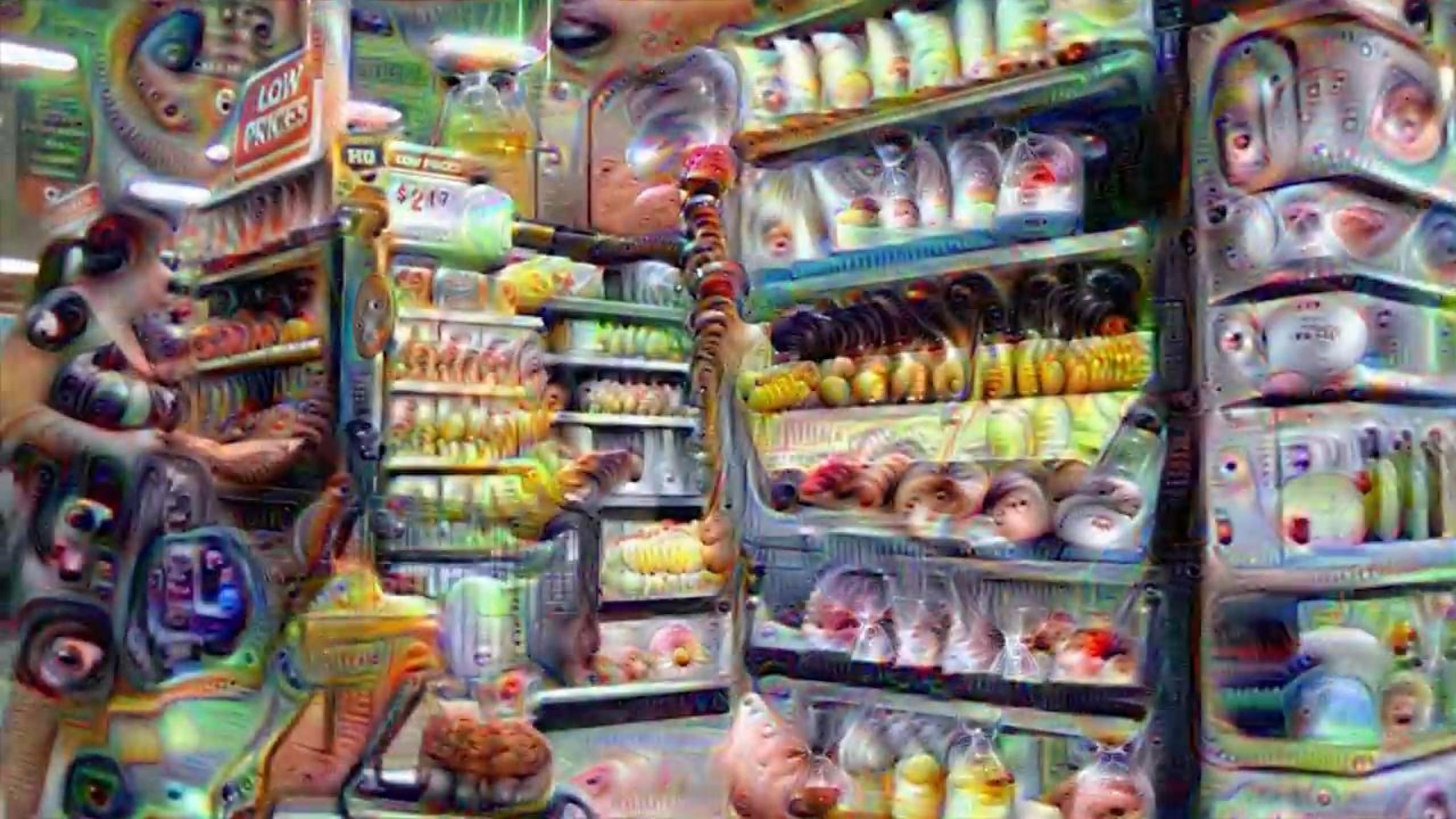
Matthew

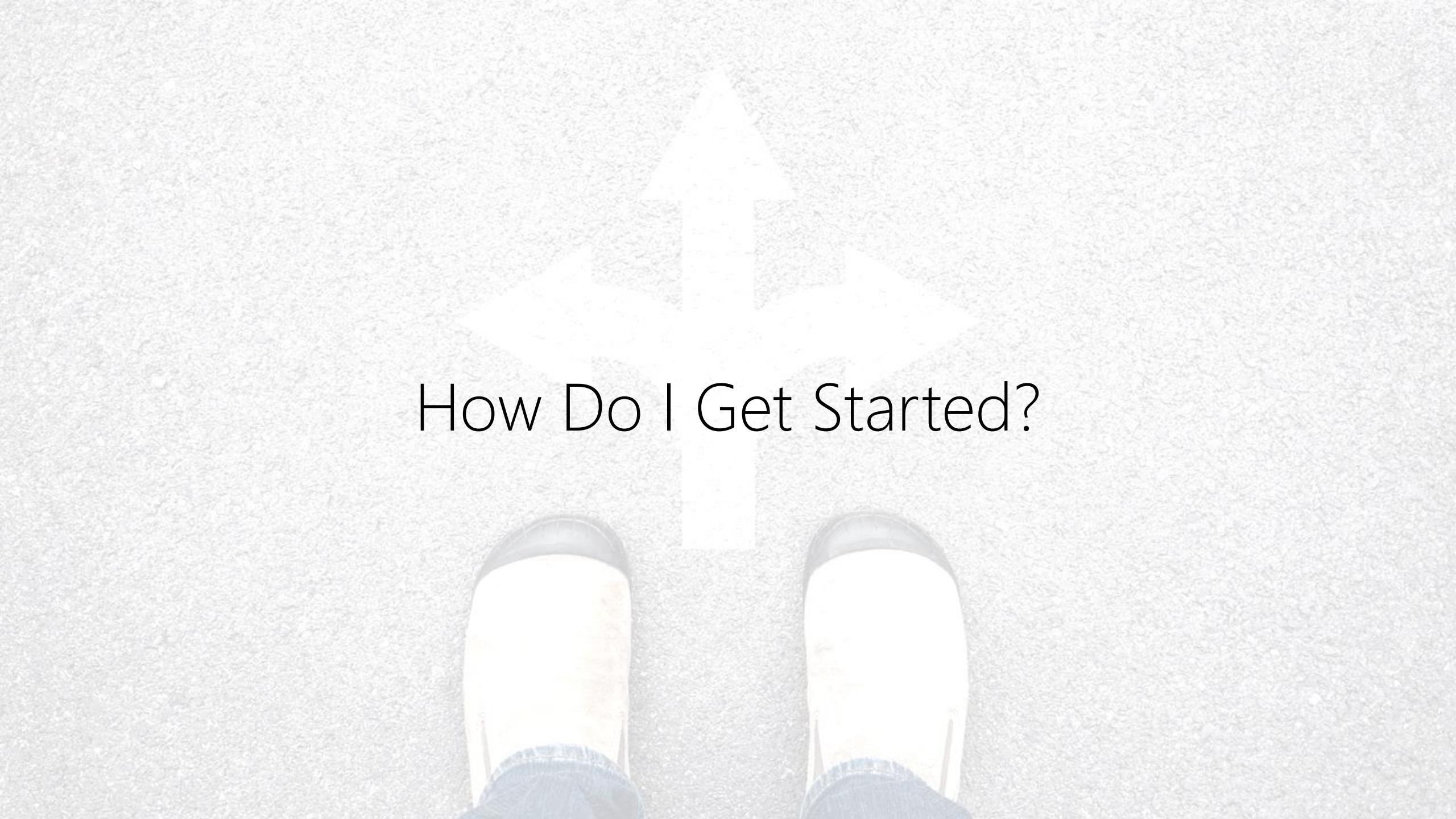
Renze



1 Second





A grayscale photograph showing a person's lower legs and feet from a top-down perspective. The person is wearing light-colored sneakers and dark blue jeans. The background is a textured, light-colored floor.

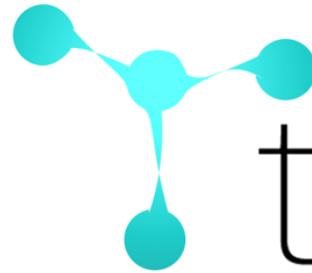
How Do I Get Started?



Option 1: Create Your Own Algorithms



TensorFlow



torch



CNTK

theano

Option 2: Train Models with Existing Algorithms

Custom Vision Service

Custom Speech Service



Option 3: Use Existing DL Models



Google
Cloud Platform



Microsoft
Cognitive Services





Where to Go Next



PLURALSIGHT

Data Science with R

★★★★★ By Matthew Renze

Data science is becoming more and more valuable to the workplace and to the global economy. Learn how to use the practice of data science and the programming language R to transform your data into actionable insight.

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Pluralsight Courses

TensorFlow: Getting Started
Getting Started with Machine Learning
Understanding Machine Learning
Understanding Machine Learning with R
Understanding Machine Learning with Python



News

2017-08-25 - Invitation to Speak at Devoxx Morocco

Very excited to announce that I've been invited to give a keynote in Casablanca at [Devoxx Morocco](#) in November. My keynote presentation will be on [Artificial Intelligence](#).



2017-08-16 - Invitation to Speak at Microsoft Ignite

I've been invited to speak at [Microsoft Ignite](#) in Orlando, Florida in September. This will be my first time speaking at Ignite. Talks will include both Data Science and Machine Learning with R.

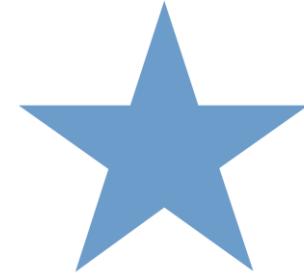


Matthew is a data science consultant, author for [Pluralsight](#), international public speaker, a [Microsoft MVP](#), [ASPIInsider](#), and open-source software contributor.

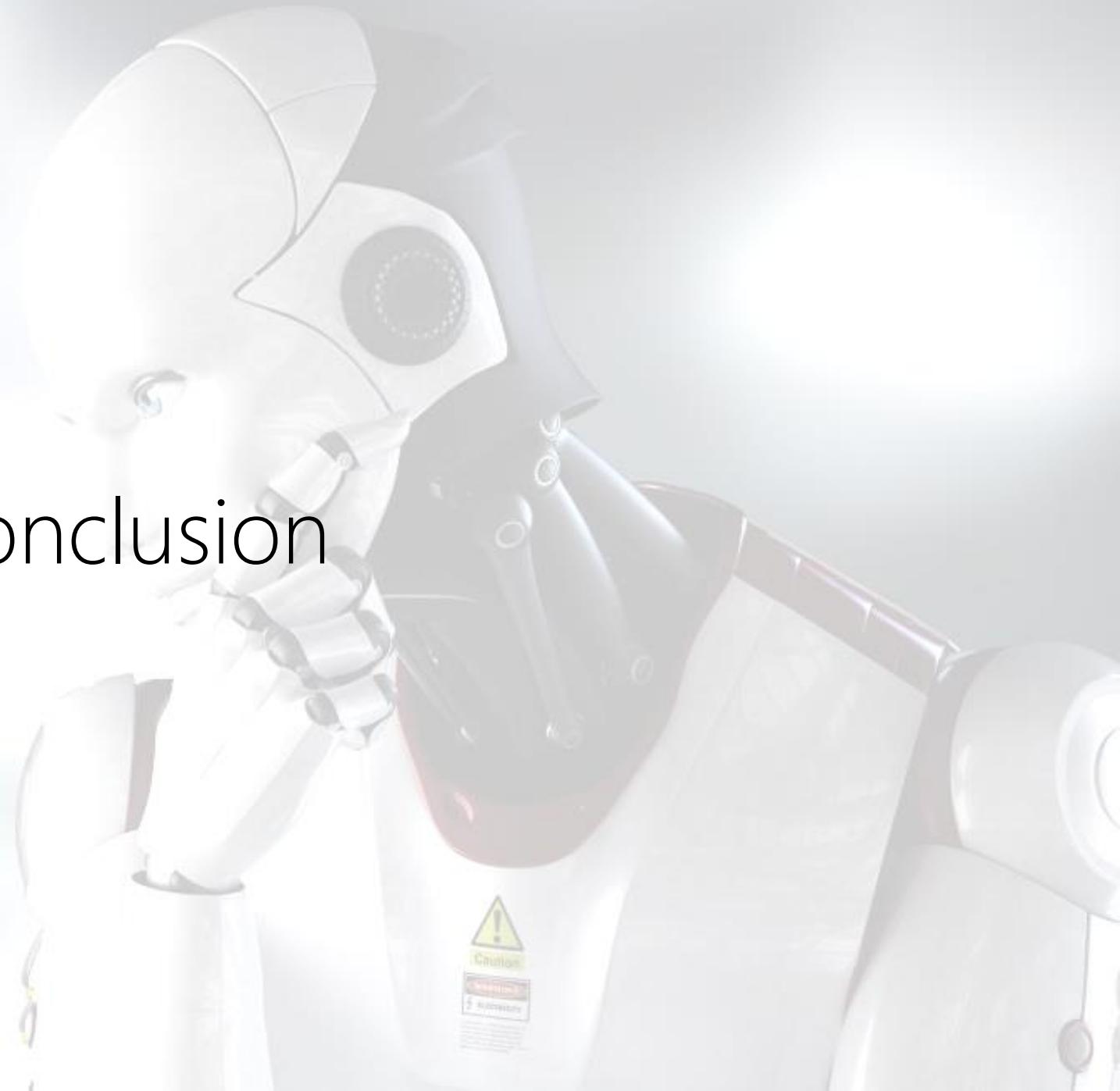
2017-08-14 - Dev on Fire Interview

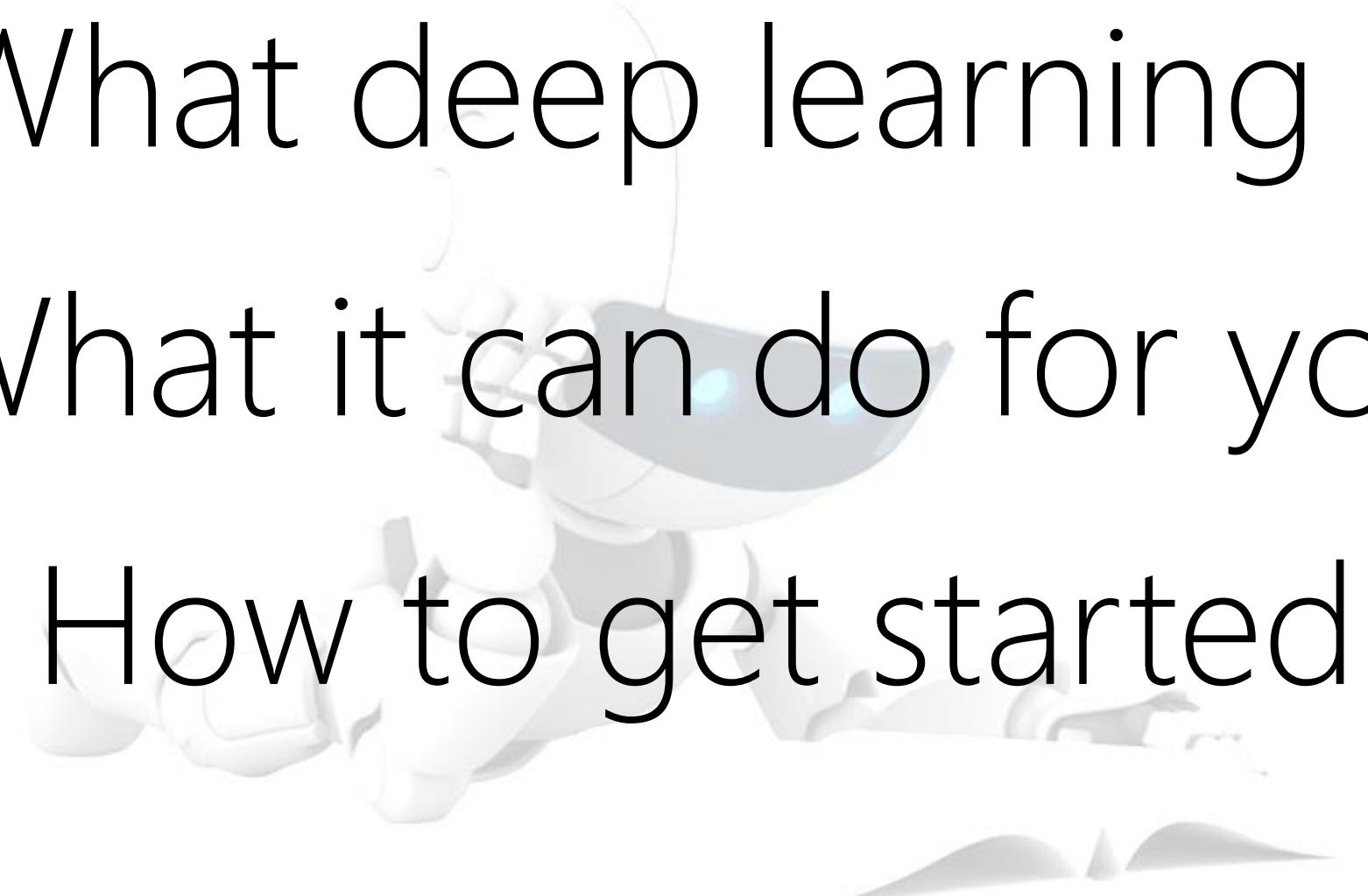
Feedback

Very important to me!
What did you like?
What could I improve?



Conclusion





What deep learning is

What it can do for you

How to get started

Thank You!

Matthew Renze

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THANK YOU

