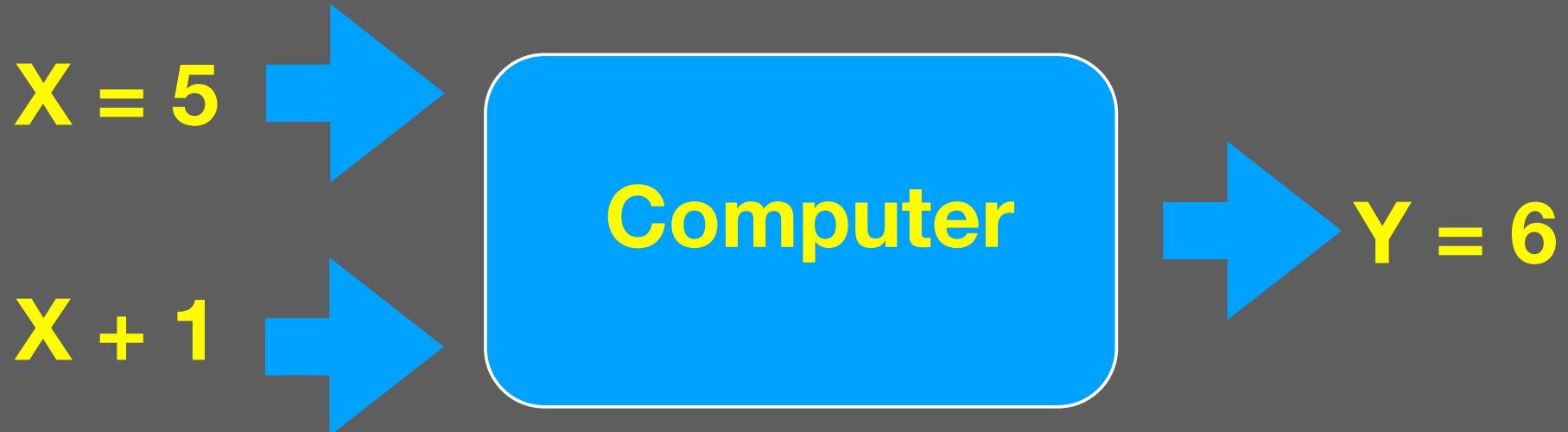


CPSU
N E X T

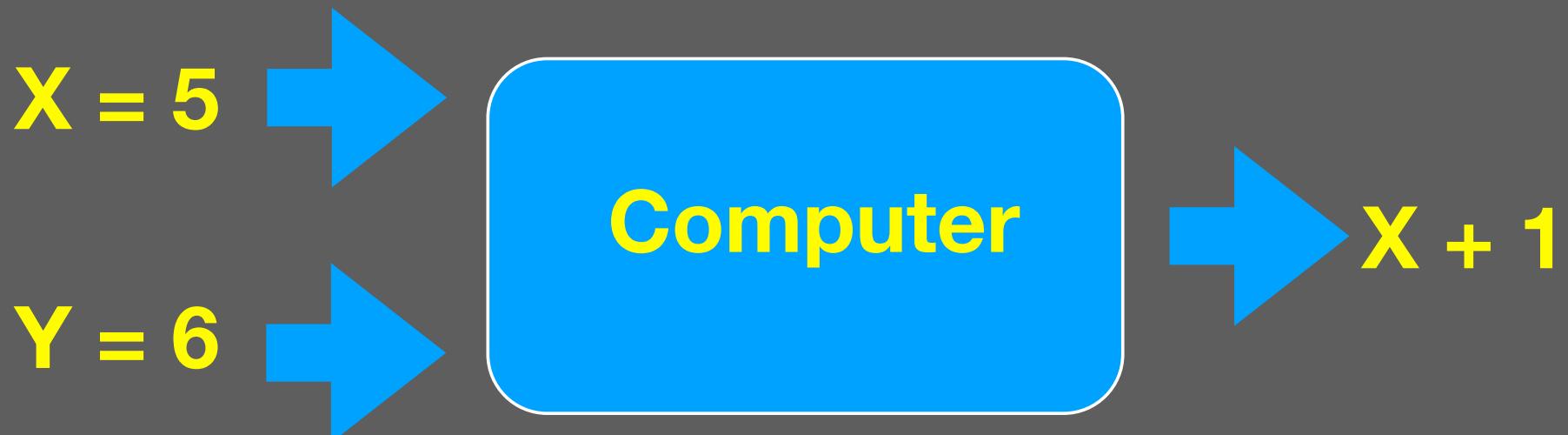
Machine Learning

โดย อ.ดร.ณัฐ โชค พรมฤทธิ์

Traditional Programming



Machine Learning



Programmer vs AI

Jeol Itasn Eh Hipbuwq

Tsoan
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[Baoaq Okce](#)

Nnvju
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[Xxir Rpjt](#)

Ekgbl
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[Itkb Boluh](#)

Rzuze Edj Aortj Jmhi

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Dgrwe
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[Mrk Kekhip](#)

Tajhb
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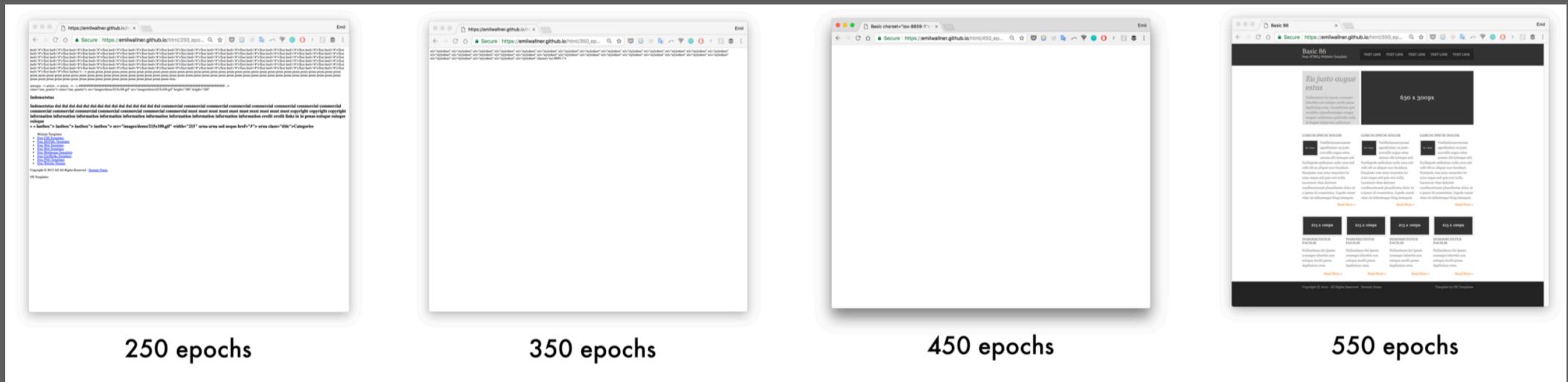
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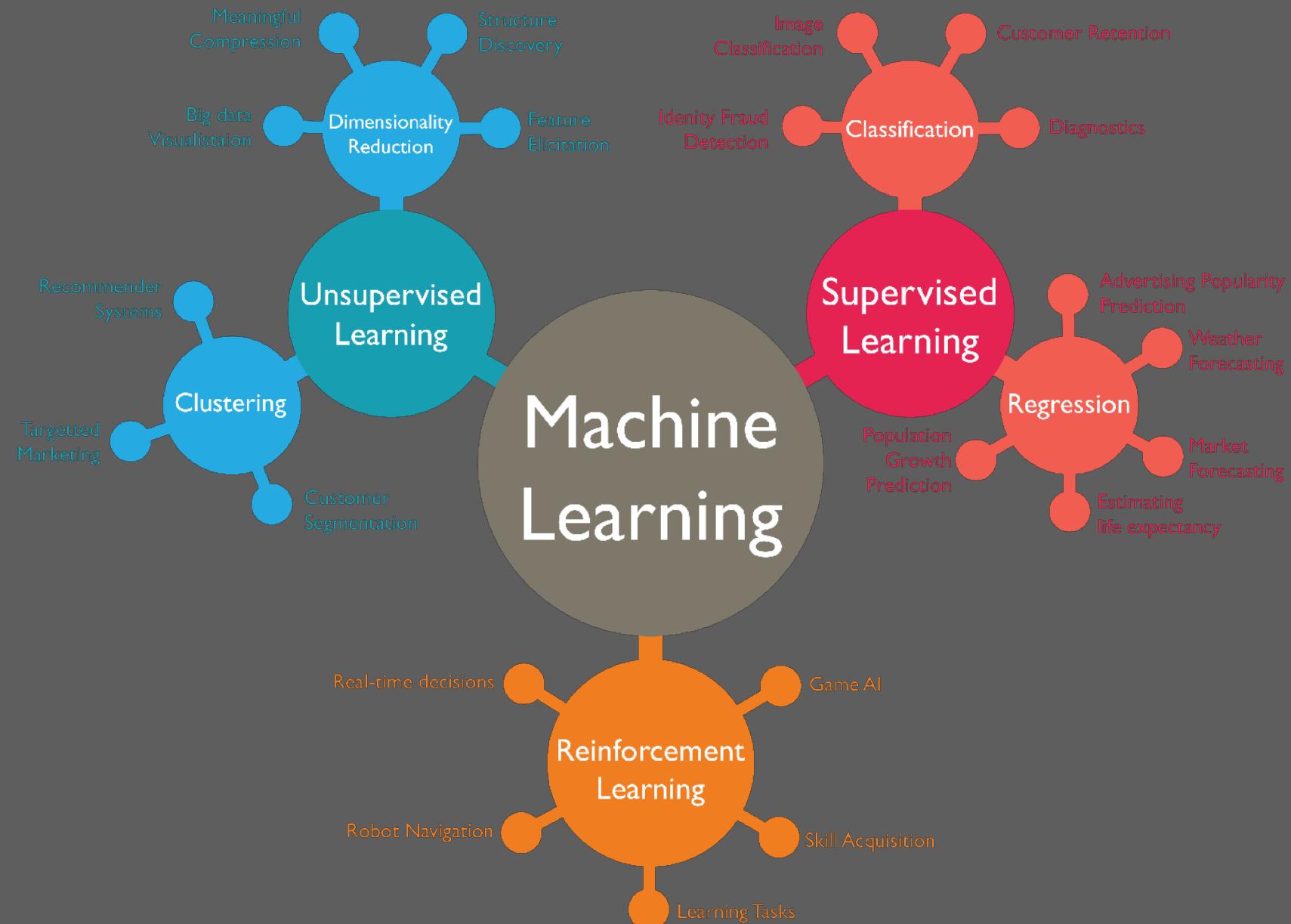
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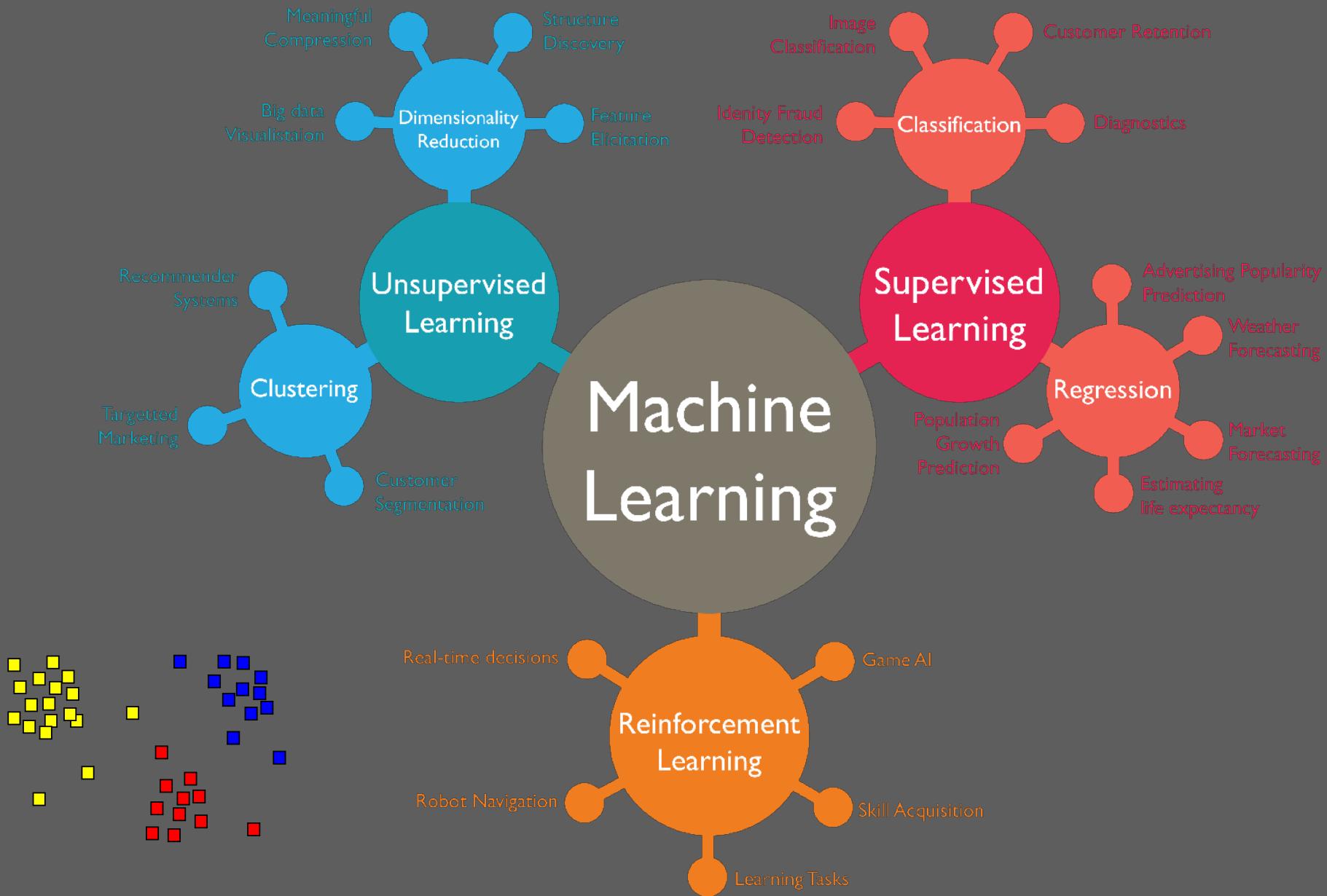
Training



Types of Learning



Types of Learning



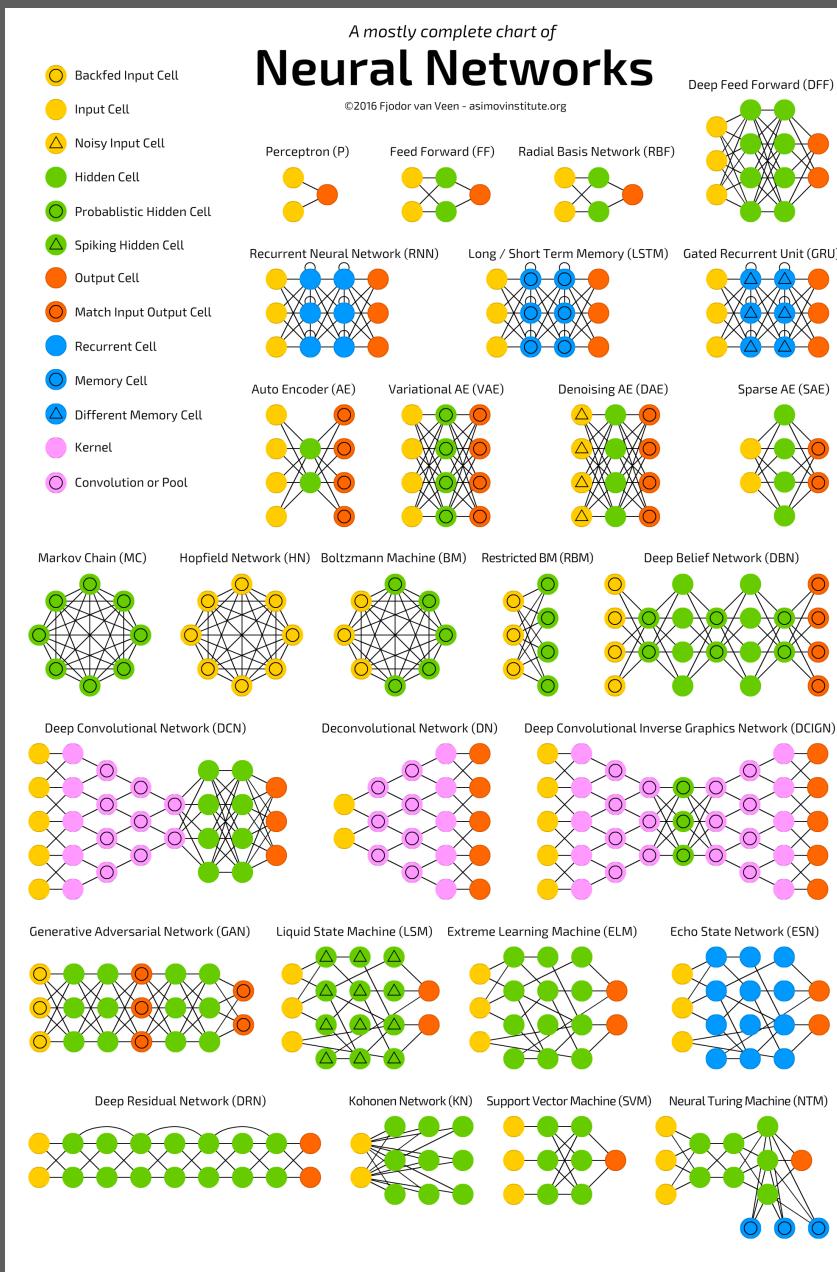
Representation

decision trees

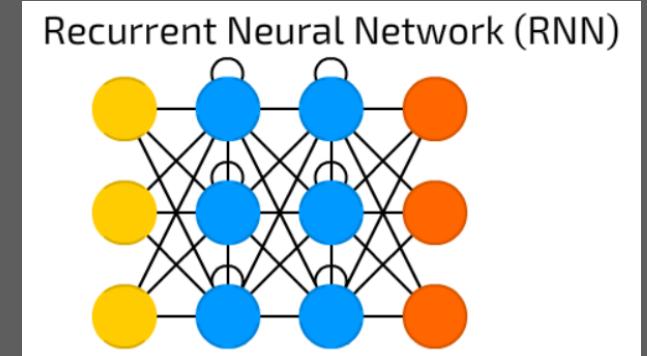
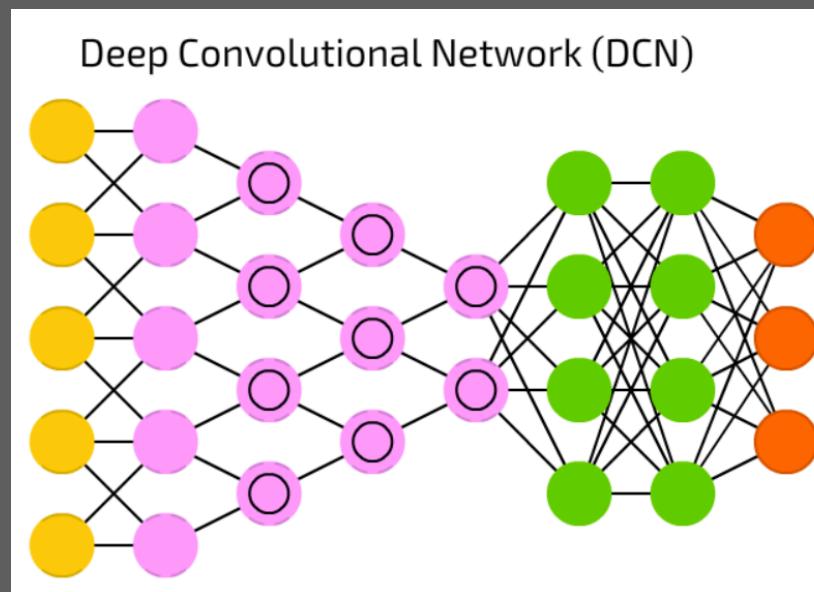
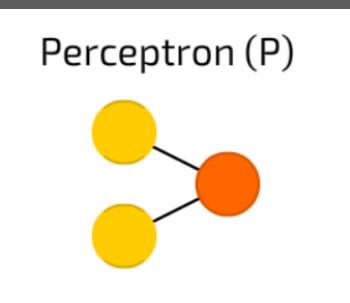
neural networks

sets of rules

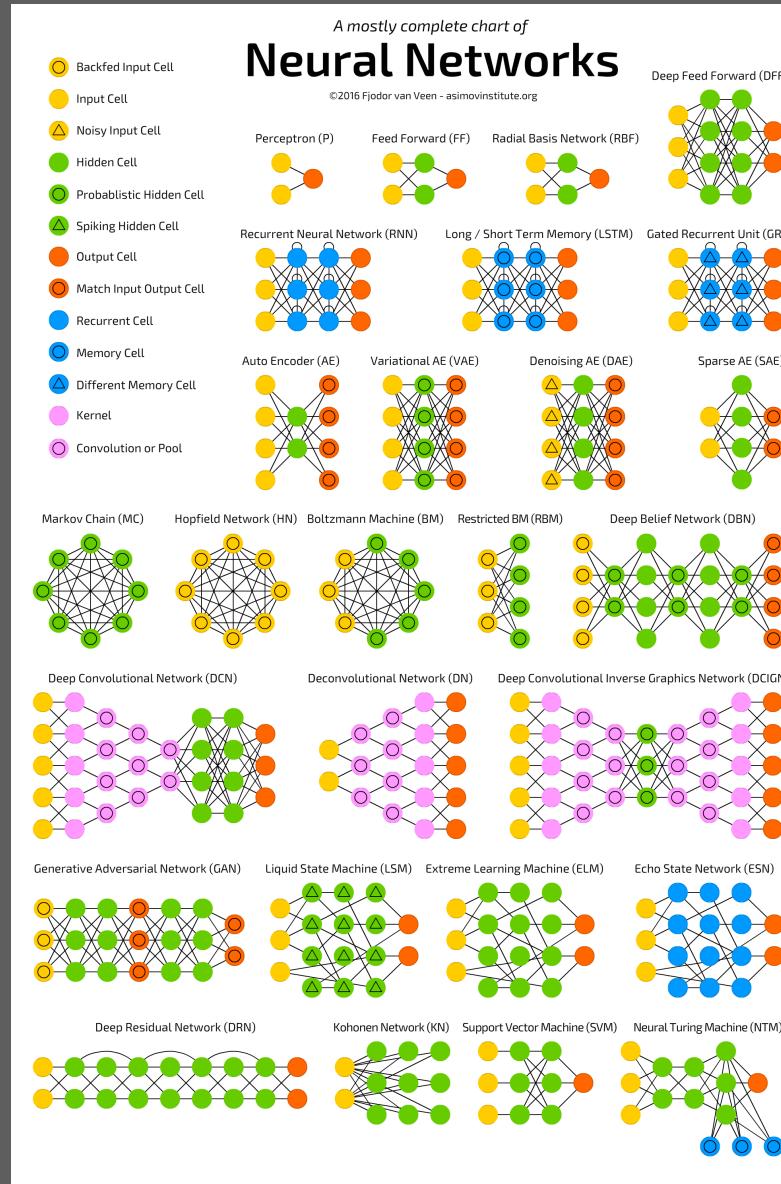
Representation



Representation



Tensorflow.js

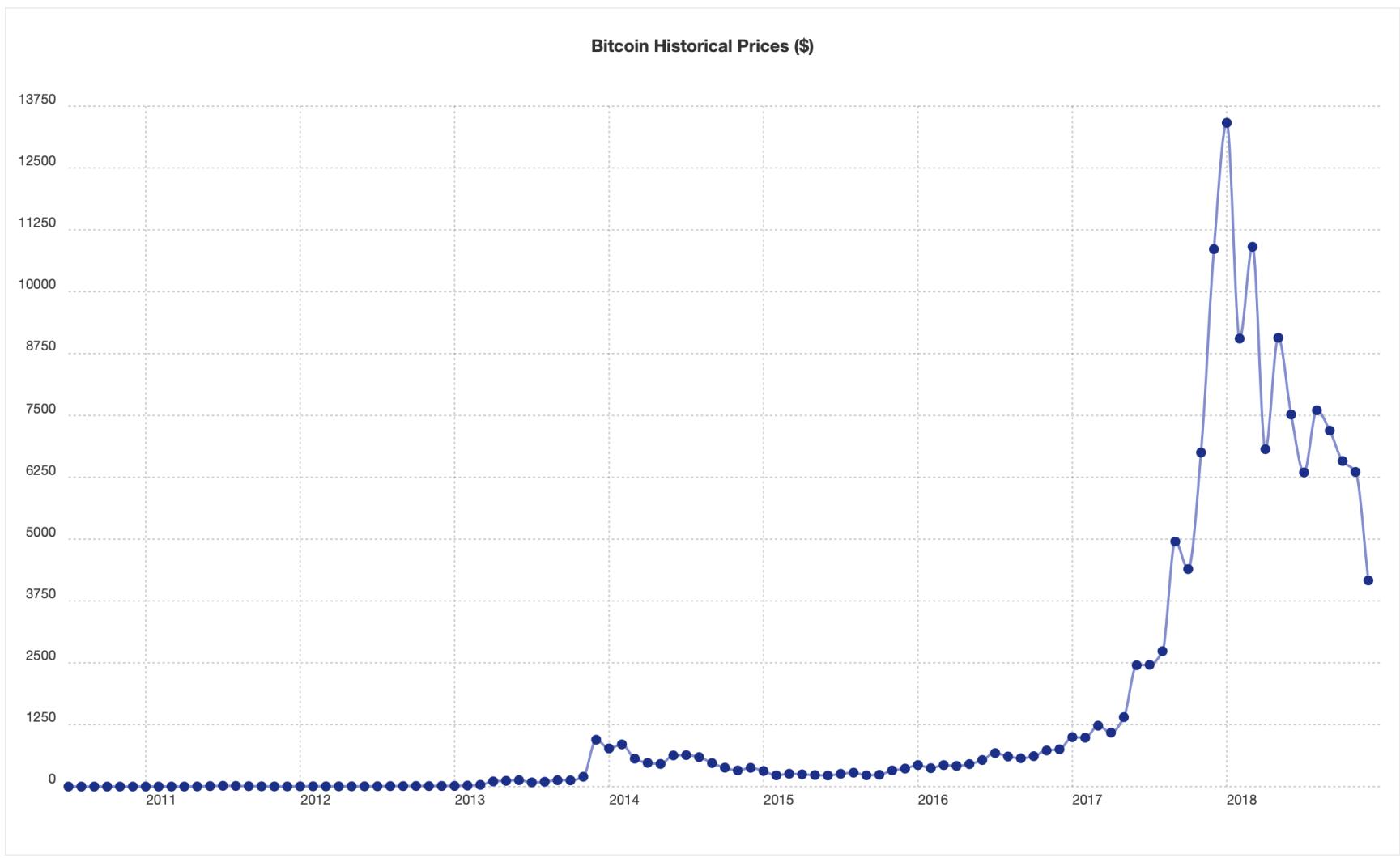


<https://storage.googleapis.com/tfjs-examples/webcam-transfer-learning/dist/index.html>

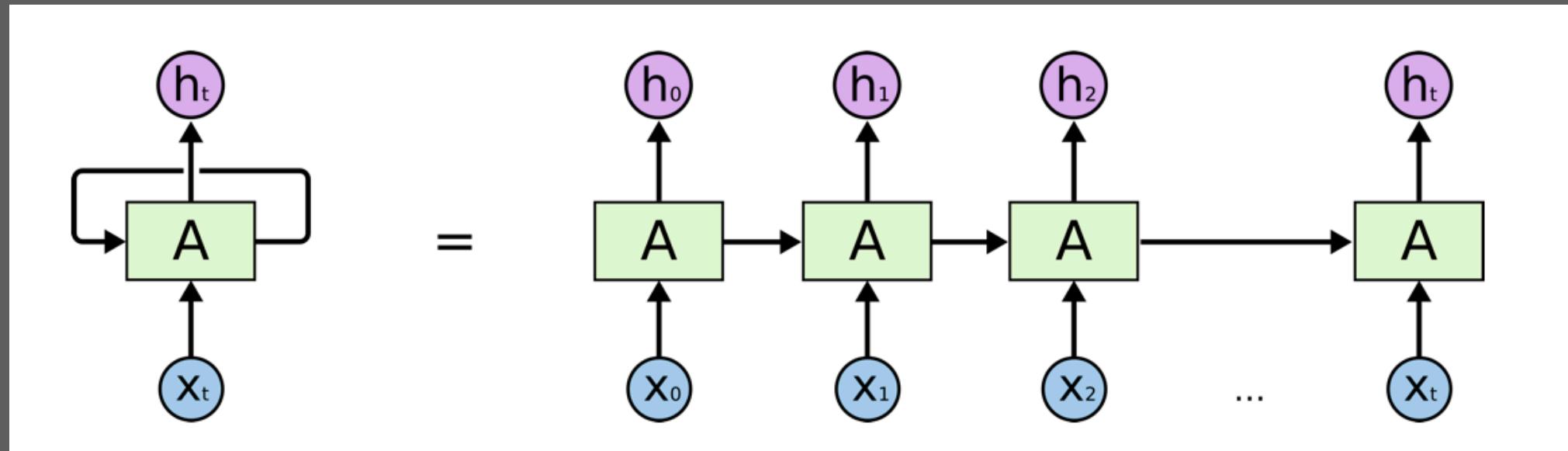
Time Series forecasting

Bitcoin Price Chart, 2010-2018

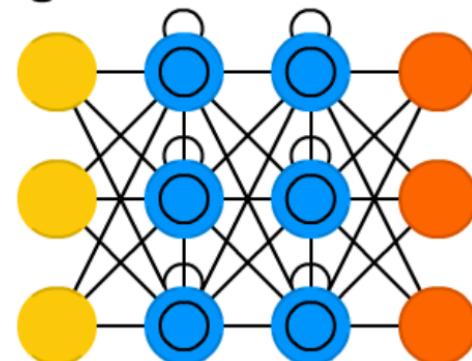
This graph shows the conversion rate of 1 Bitcoin to 1 USD at the first of each month.



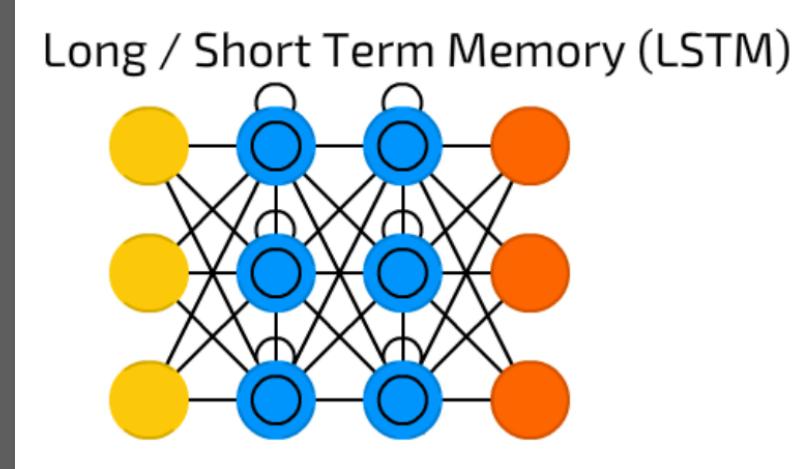
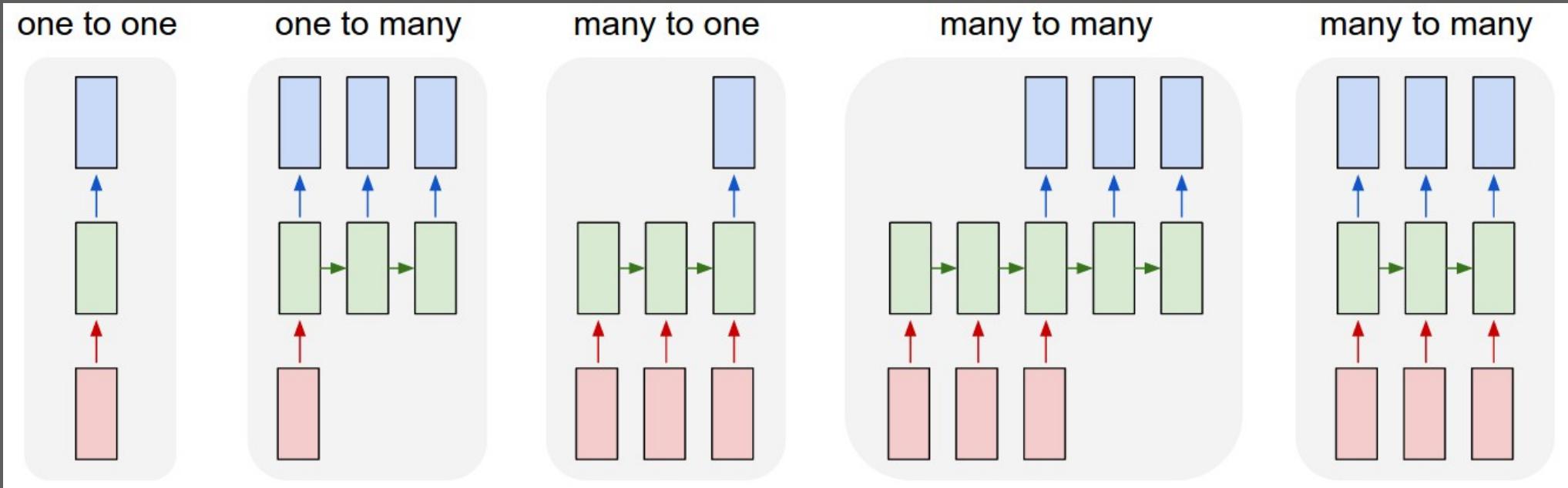
RNN



Long / Short Term Memory (LSTM)



RNN



Tensorflow.js

Prepair Data

Define model

Compile

Fit (Train)

Save

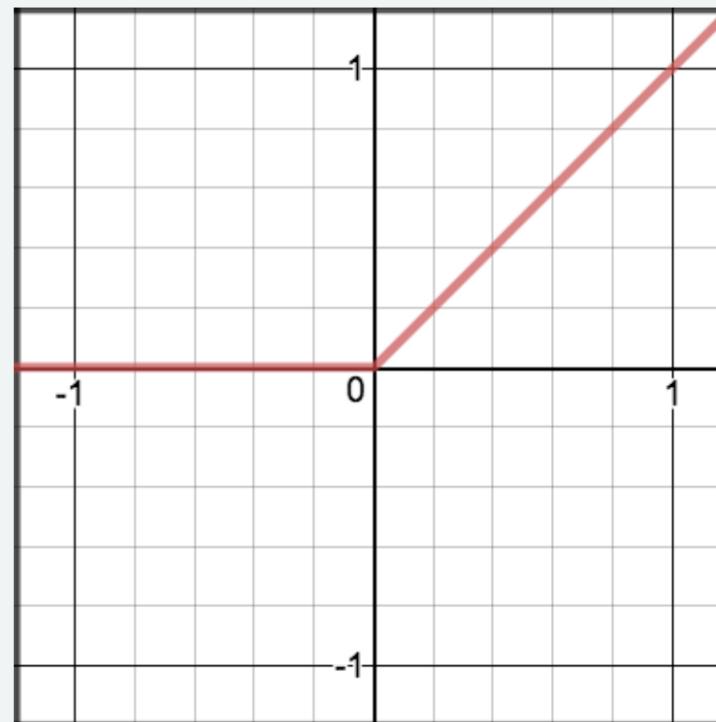
Load

Predict

Relu

Function

$$R(z) = \begin{cases} z & z > 0 \\ 0 & z \leq 0 \end{cases}$$



Loss

`meanSquaredError`

`meanAbsoluteError`

`categoricalCrossentropy`

`binaryCrossentropy`

Optimizers

SGD

Adam

RMSprop