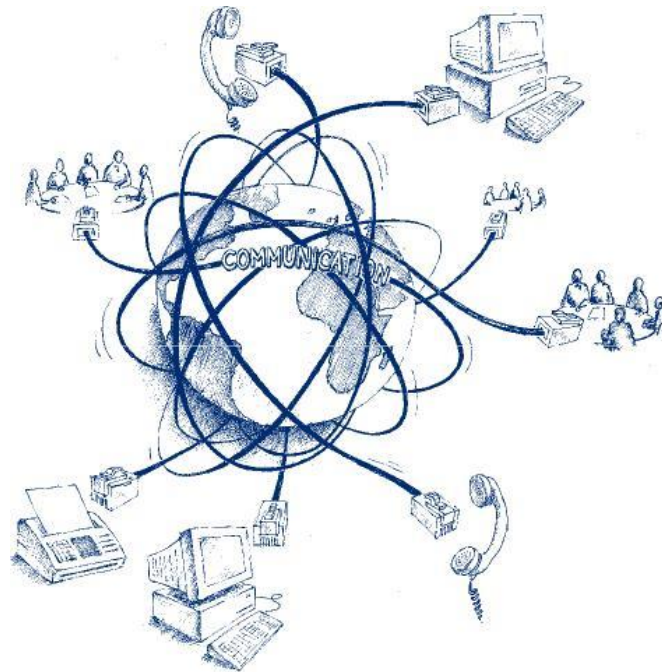


Seamless

..... @ KOM



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Structure



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Introduction

Motivation

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Task Definition

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Lottery Ticket Hypothesis

- Many networks in use atm are overloaded (too many weights)
- From the moment of initialization there are smaller subnetworks that perform similar given the same amount of training
- These subnetworks can be deduced from the weights of the main network after it has concluded its training

Motivation I



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Executability

- During Use

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B&R

Trainability

- During Development

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Int

Feed-forward Neural Networks

- ...

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Convolutional Neural Networks

- ...

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Image Classification

- ...

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Background – Unsupervised Learning



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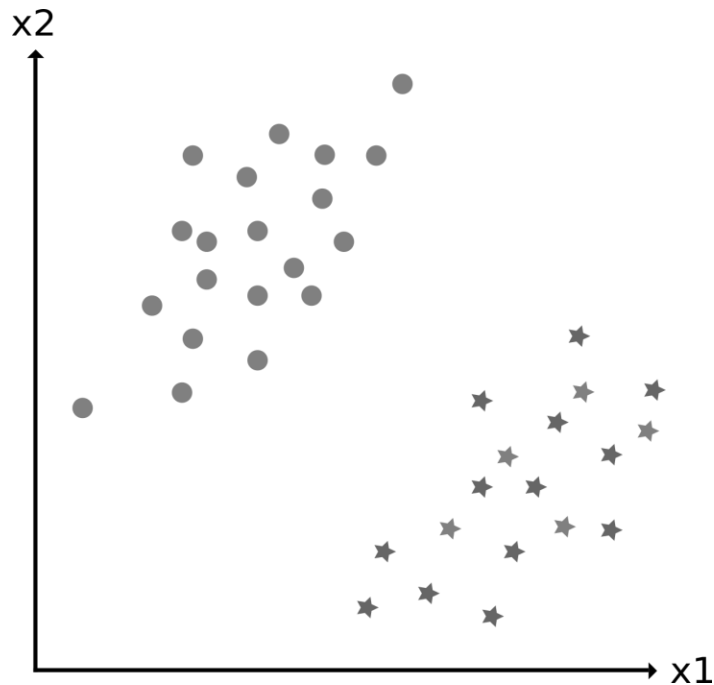
Mot

B&R

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Source: Produced by the author

Background – Unsupervised Learning

Int

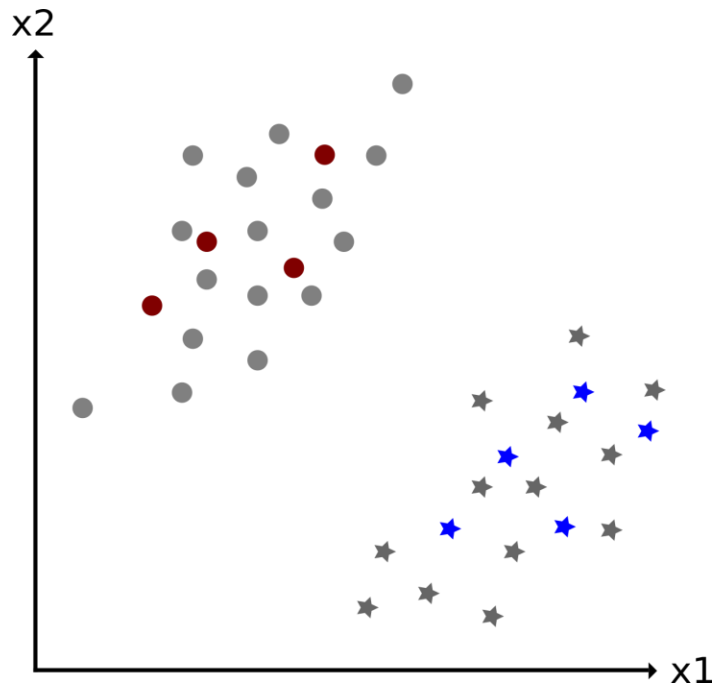
Mot

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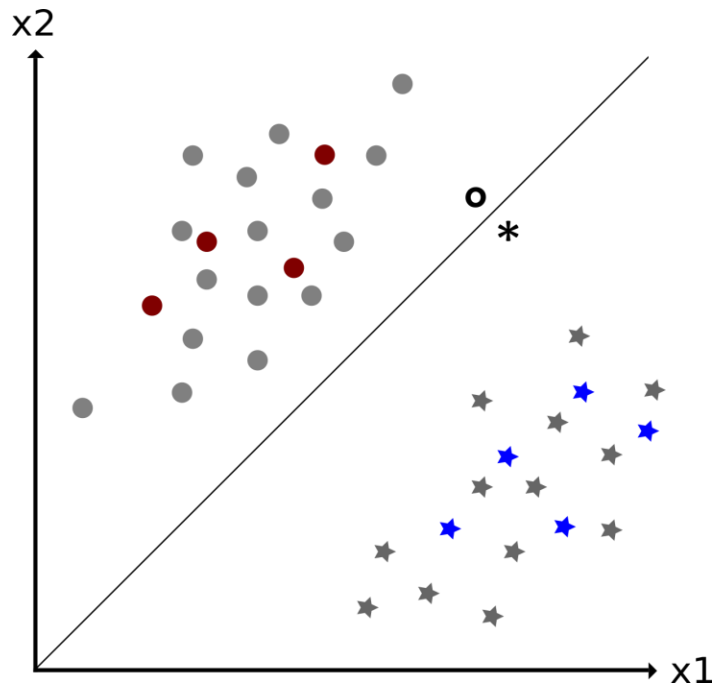
Mot

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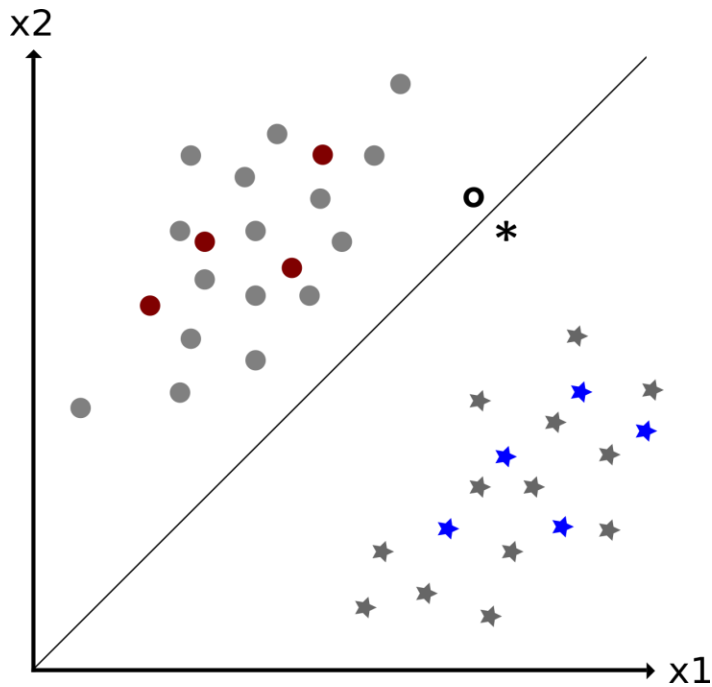
Mot

B&R

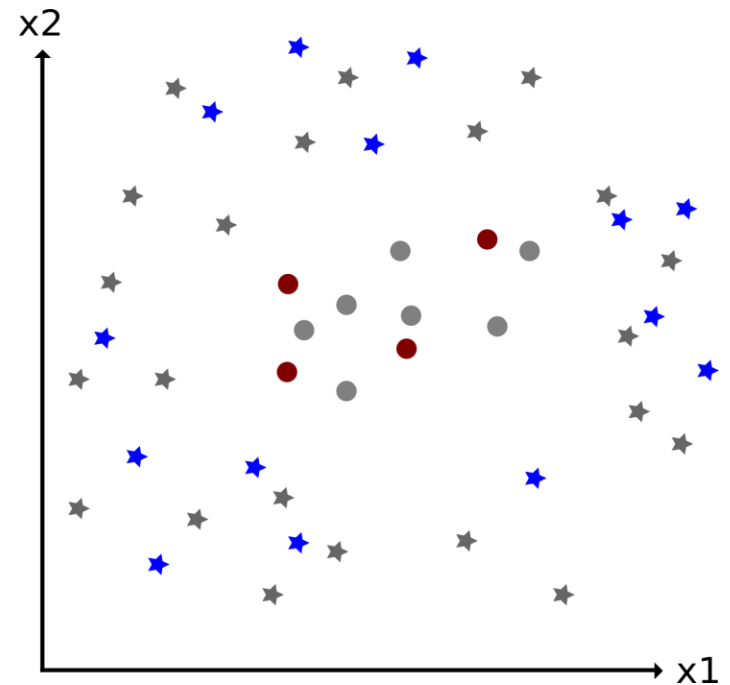
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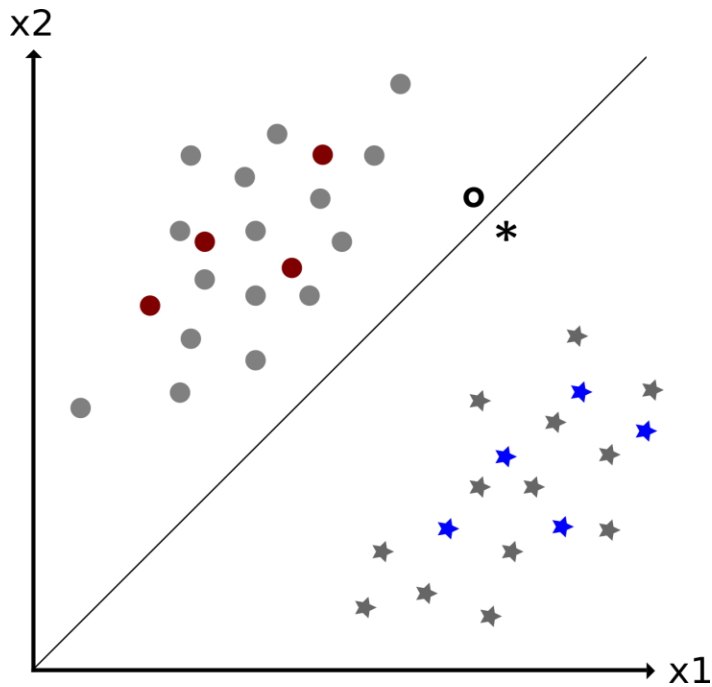
Mot

B&R

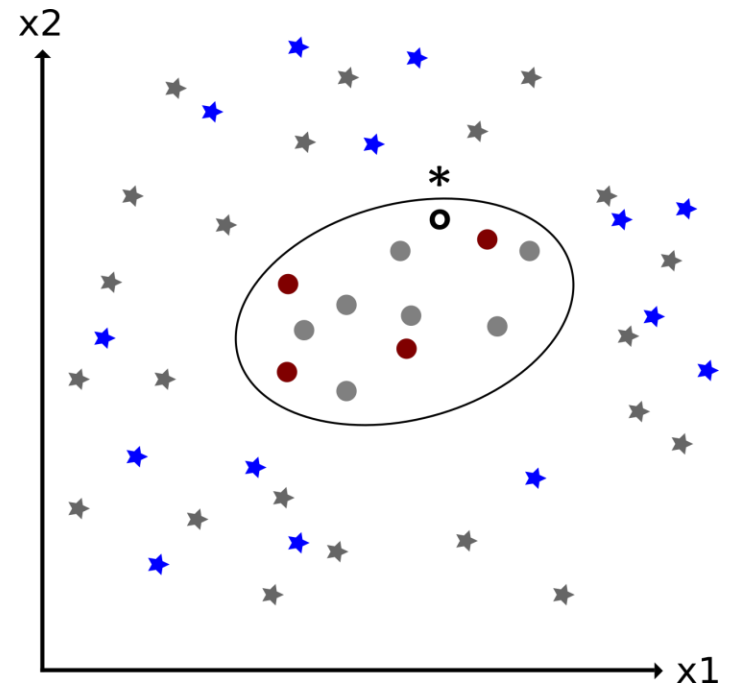
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Background – Unsupervised Learning

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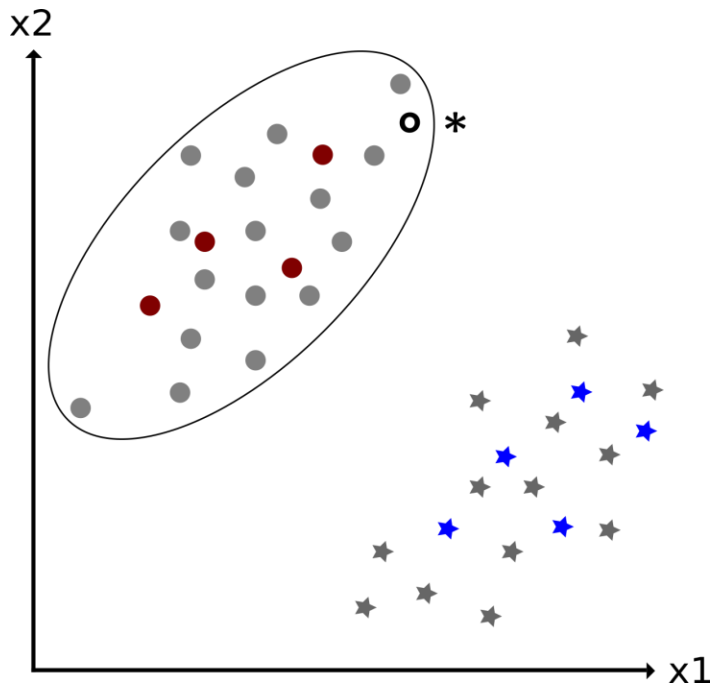
Mot

B&R

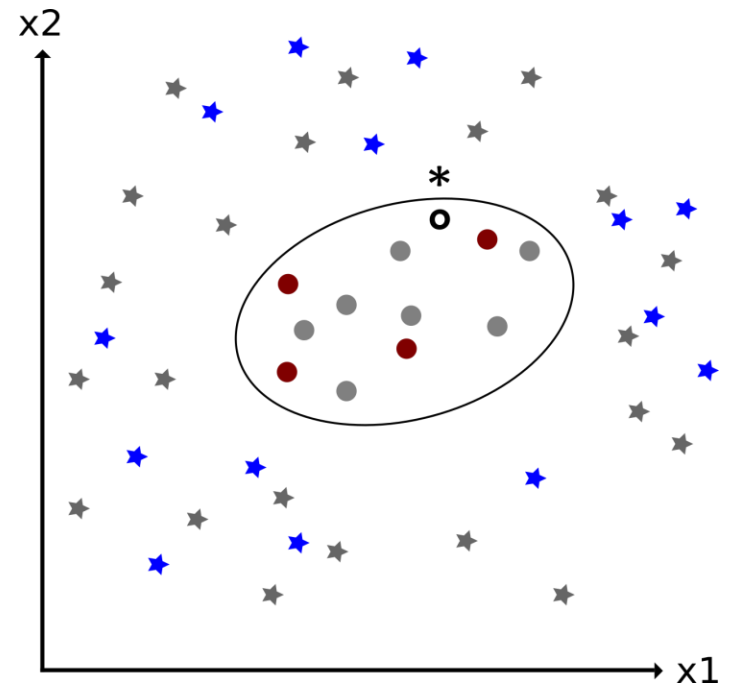
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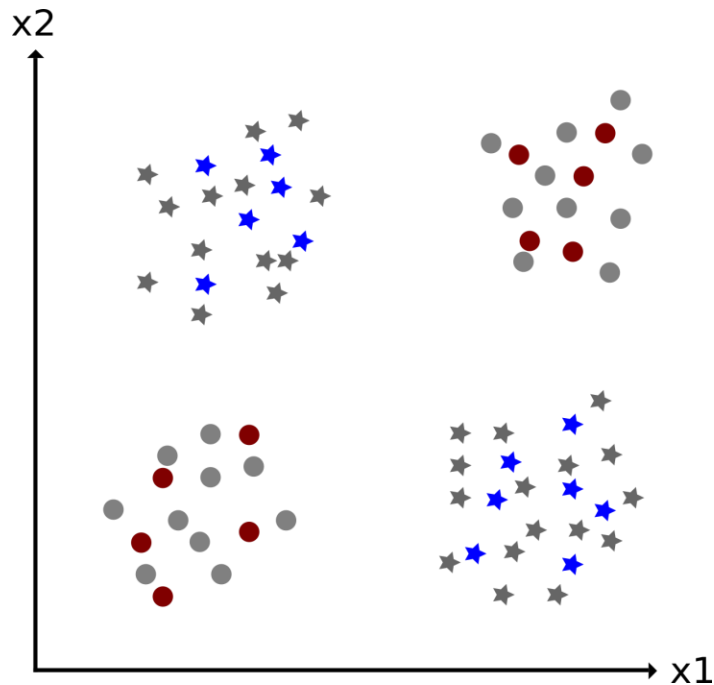
Mot

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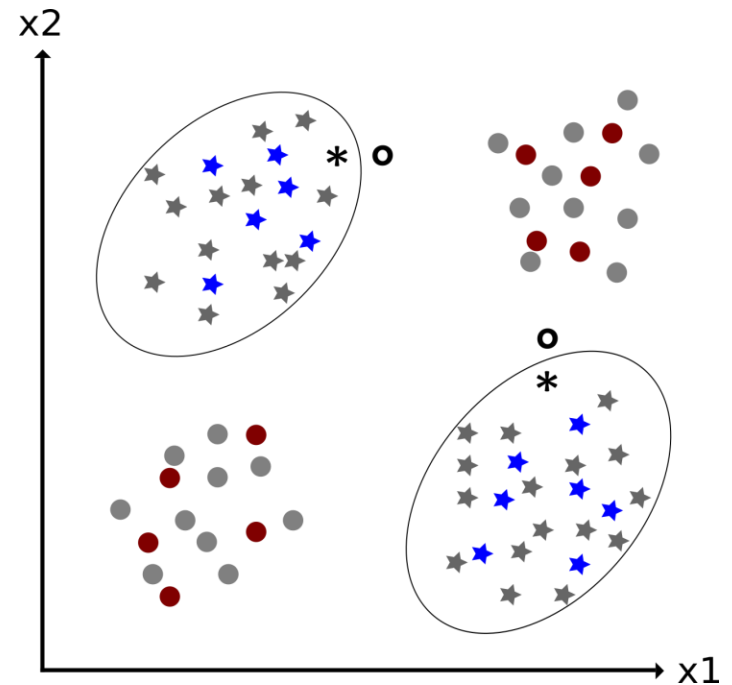
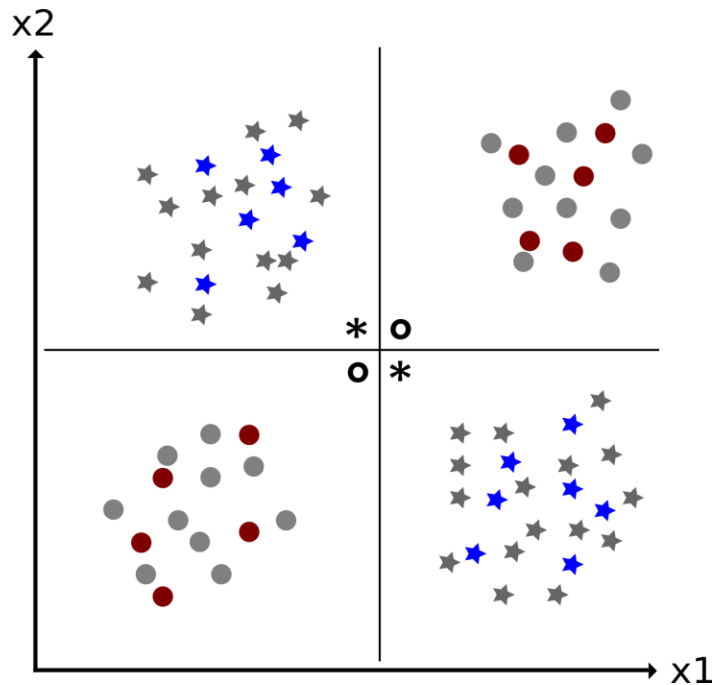
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Background – Unsupervised Learning

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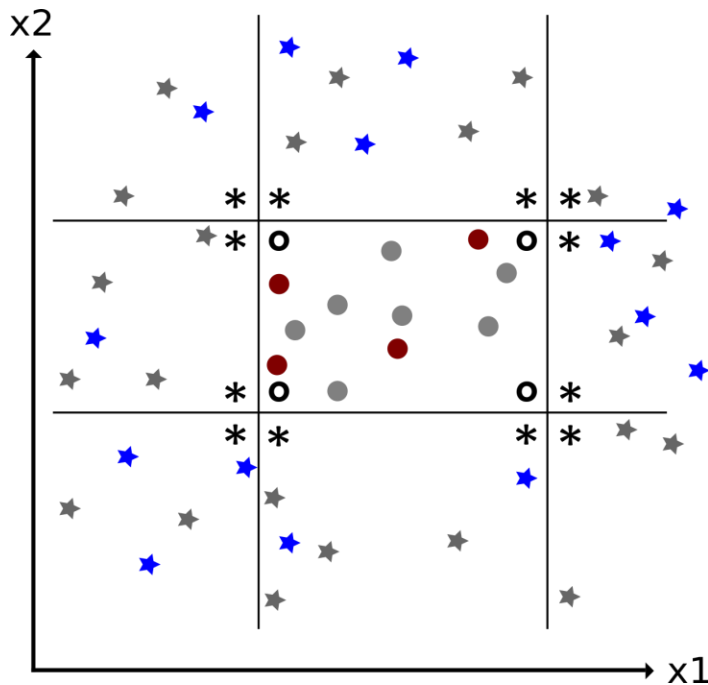
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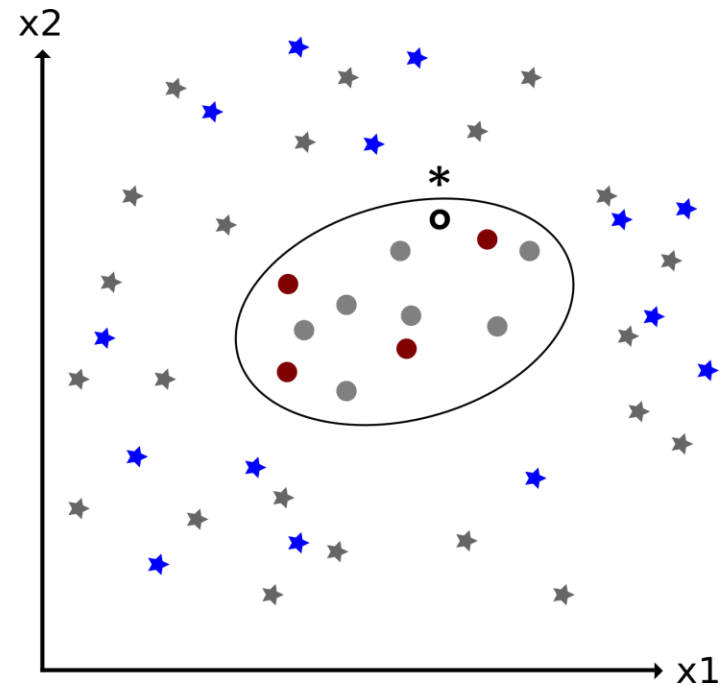
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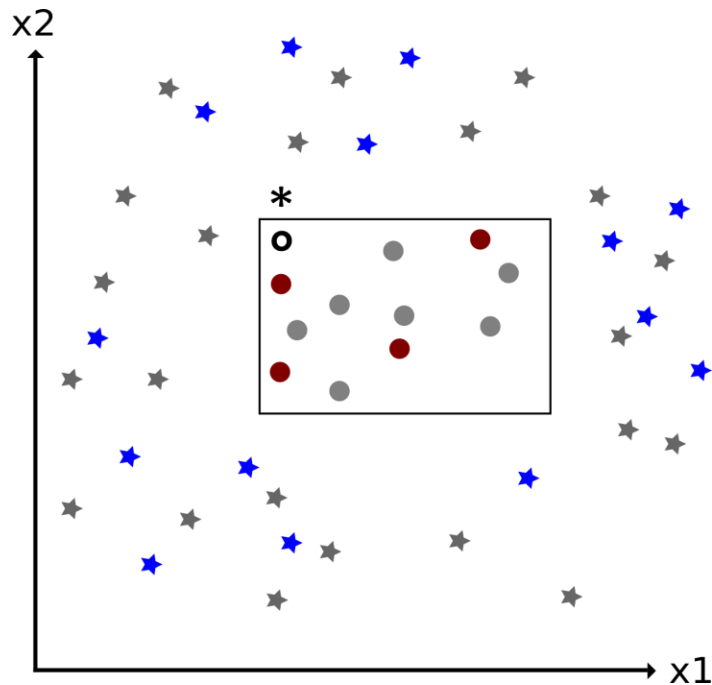
Mot

B&R

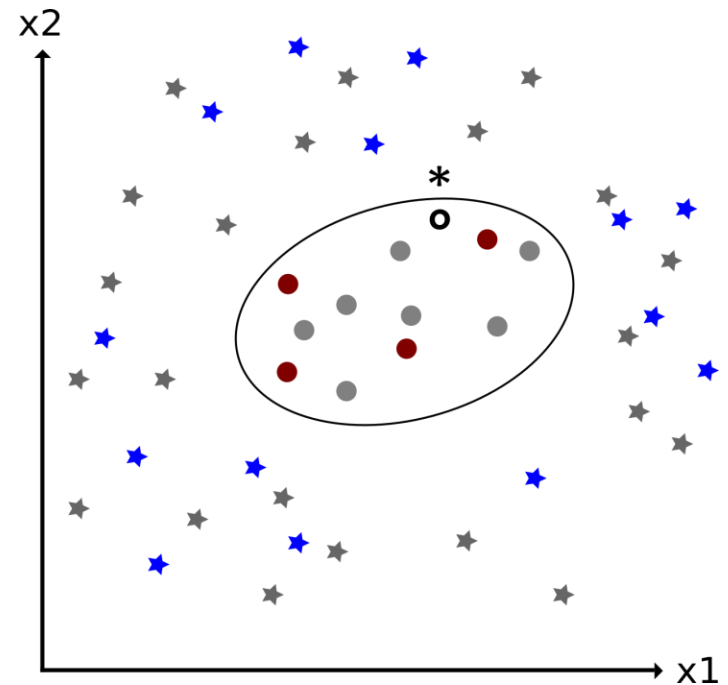
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Background – Neural Networks



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Background – Neural Networks

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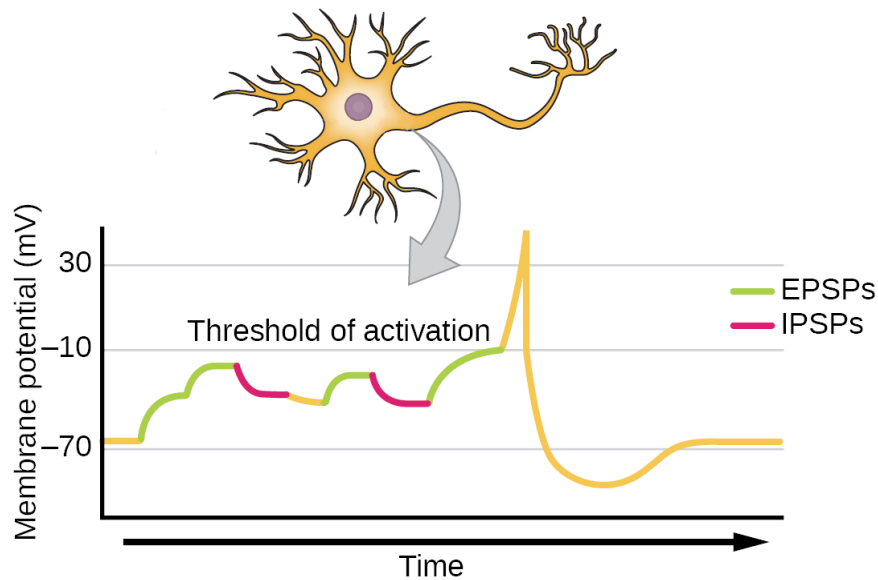
Mot

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Source: "Biology 2e" OpenStax
Sec.35.2

Background – Neural Networks

Int

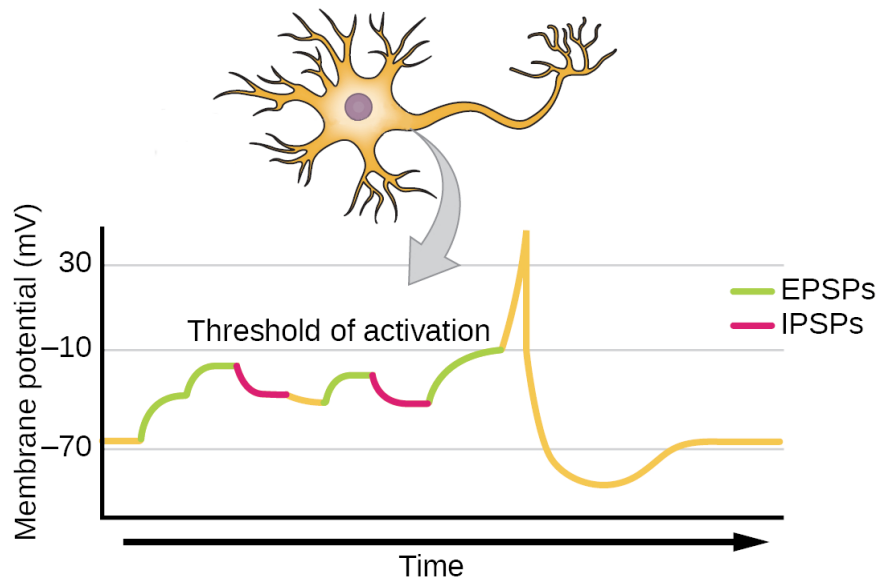
Mot

B&R

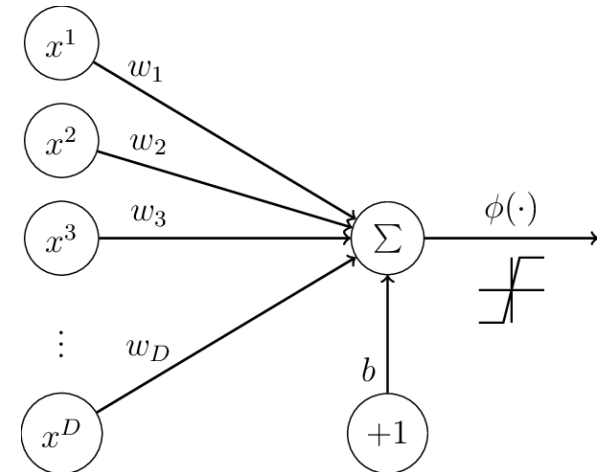
Task

Pro

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Source: "Biology 2e" OpenStax
Sec.35.2



Source: "Neural Networks Regularization
Through Representation Learning"
p. 17

Background – Neural Networks

Int

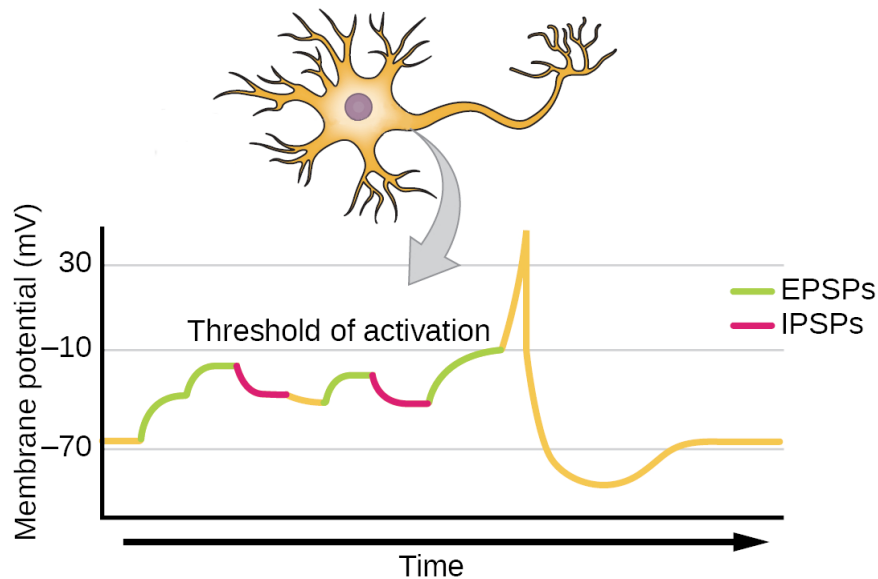
Mot

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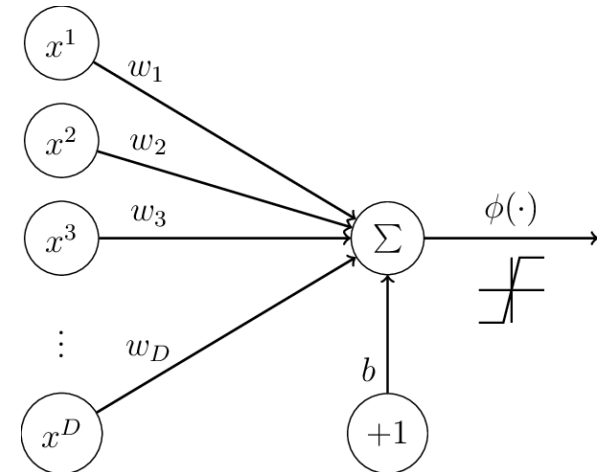
Pro

Out



Source: "Biology 2e" OpenStax
Sec.35.2

$$\text{Out} = \phi((\sum_i x_i) + b)$$



Source: "Neural Networks Regularization
Through Representation Learning"
p. 17

Related Work I



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Pruning

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Network Arichitecture

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Task I



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Reproduction

- On MNIST

Mot

B&R

Transfer

- To Reuters-???
- Find Sensible model in using FFNN or CNN

Task

Pro

Out



Int

Mot

B&R

Python-project

- Data-flow
- Find Sensible model in using FFNN or CNN

Experiments

- ...
- ...

Task

Pro

Out



Int

More custom-layers

- CNN!
- ...

Mot

B&R

More experiments

- ...
- ...

Task

Pro

Out

Thank you for your attention! Questions?



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