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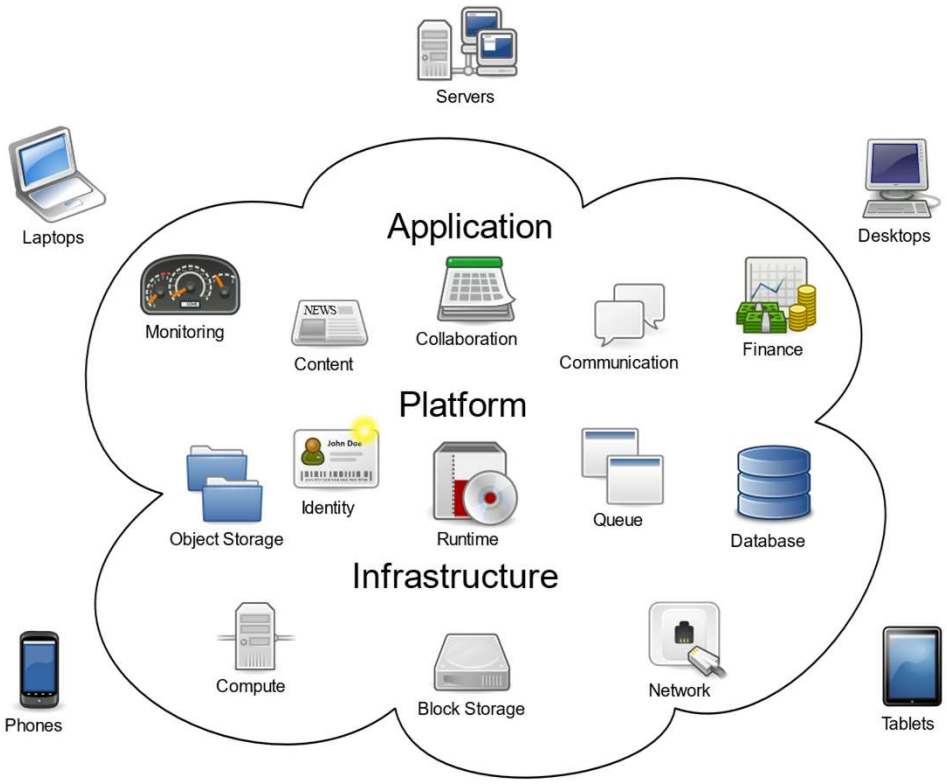
Cyber-Physical Industrial Systems

Cloud computing and artificial intelligence basics

Lecture

Cloud Computing



Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user.

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

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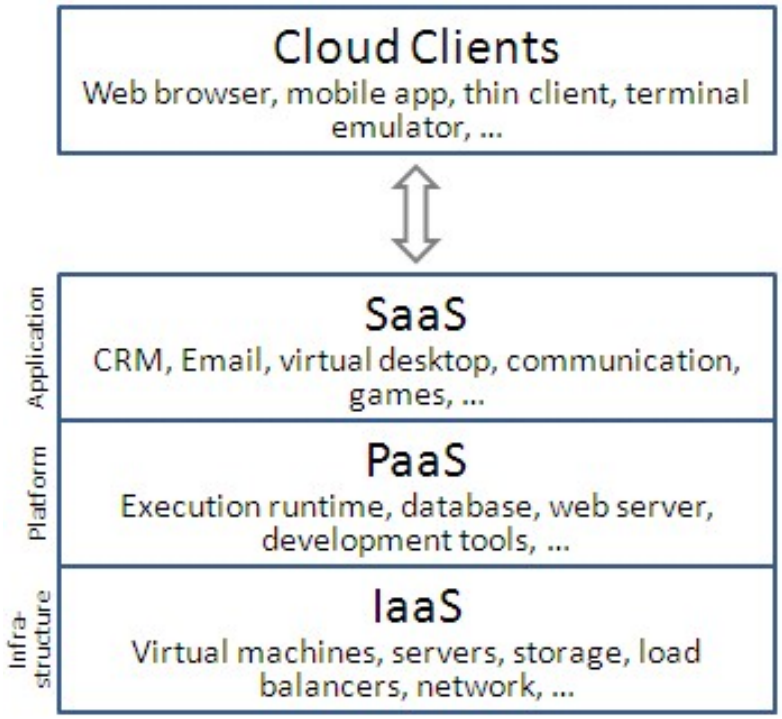
Cloud Computing



Cloud Computing Service Models

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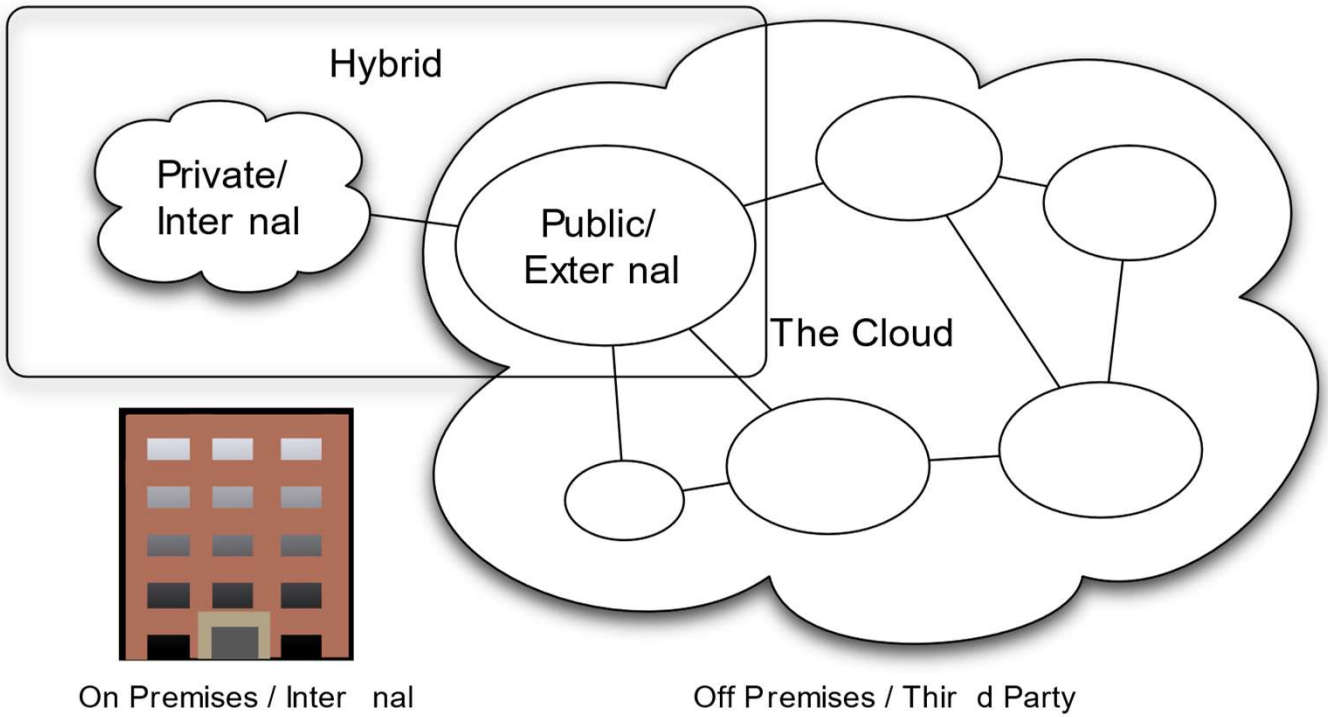
Cloud Computing



Cloud Computing Types

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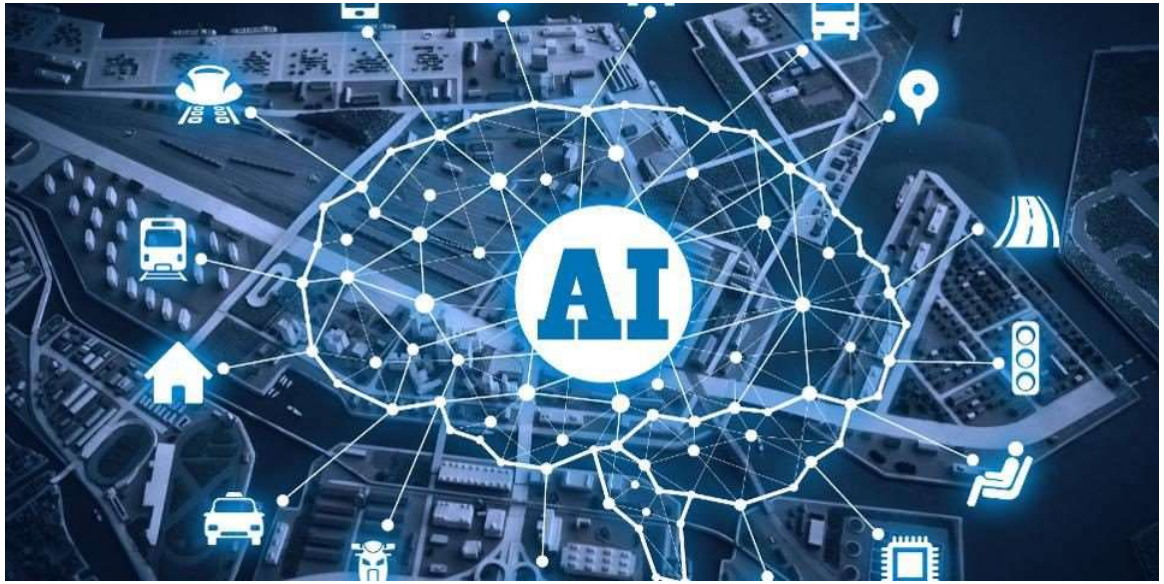
Artificial Intelligence



https://towardsdatascience.com/

Artificial intelligence (**AI**), sometimes called **machine intelligence**, is intelligence demonstrated by machines, unlike the **natural intelligence** displayed by humans and animals

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

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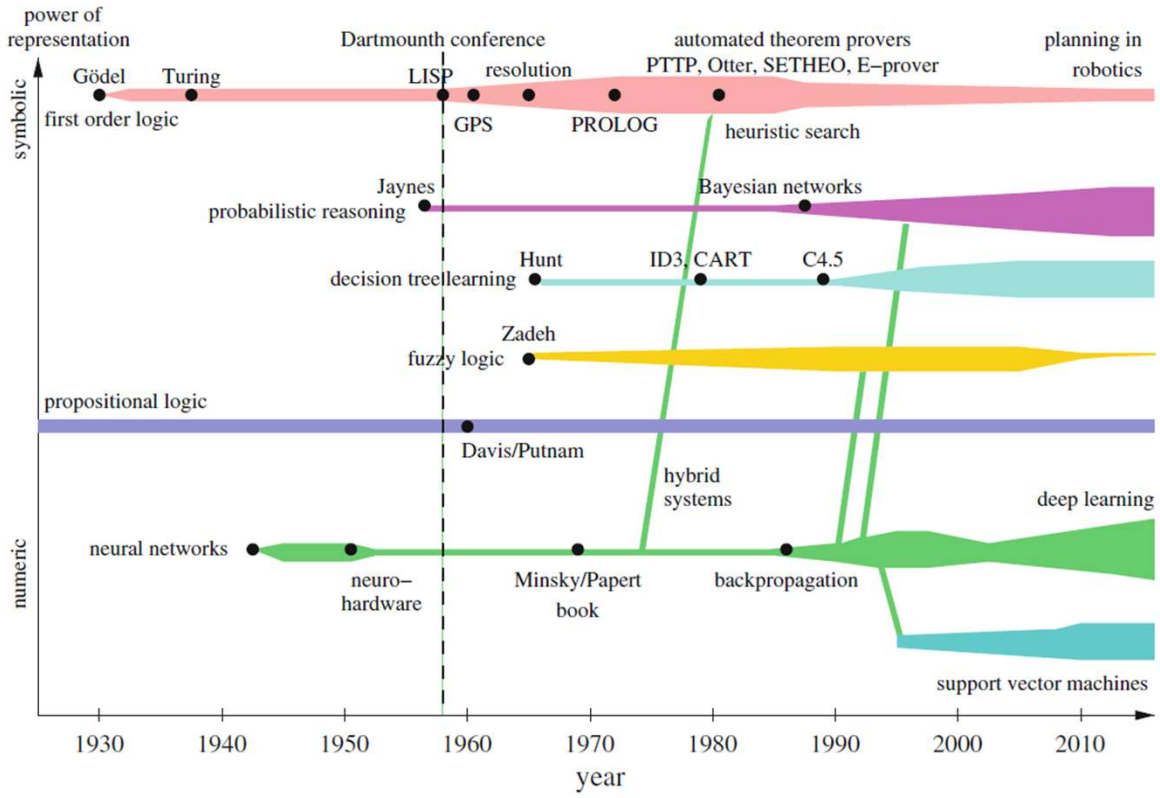
History of AI



Wolfgang Ertel
Introduction to Artificial Intelligence
2nd edition: © Springer International Publishing AG 2017

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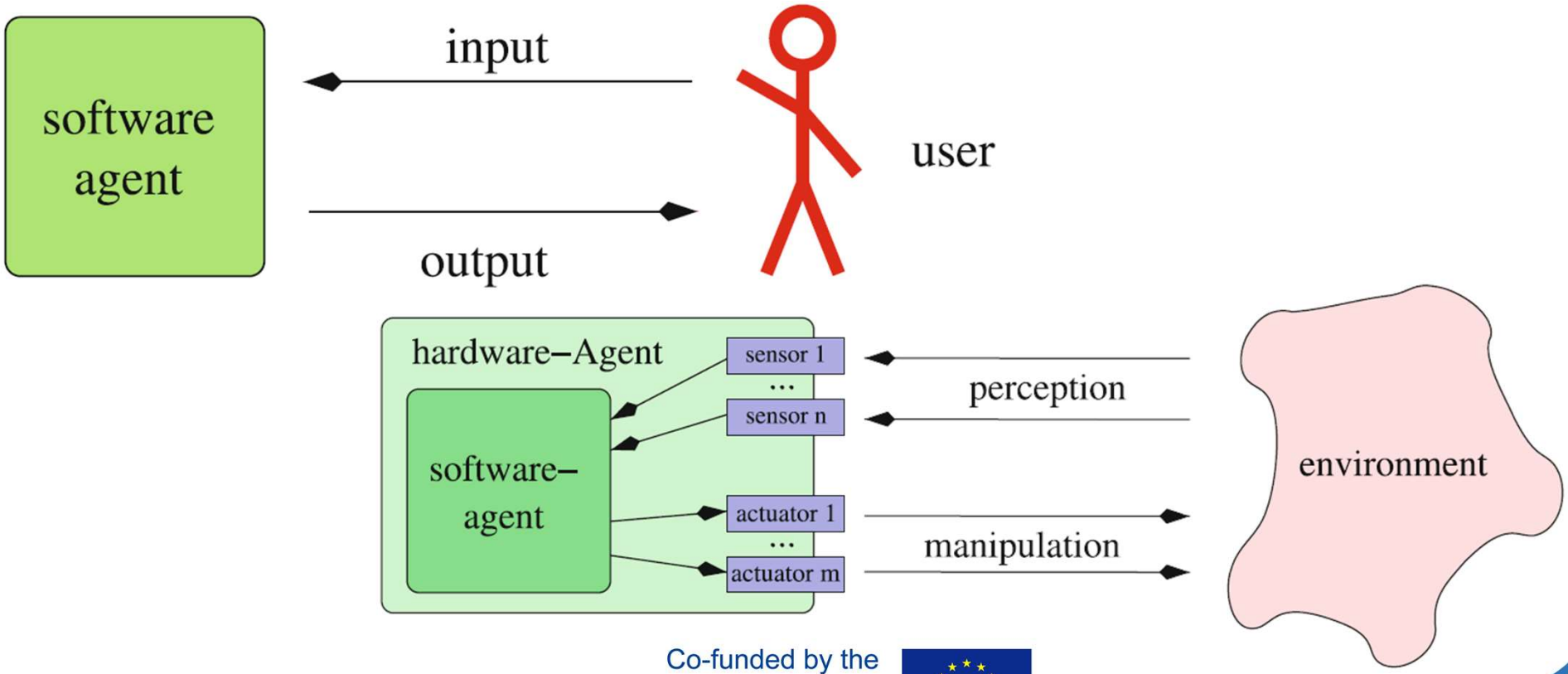
AI examples



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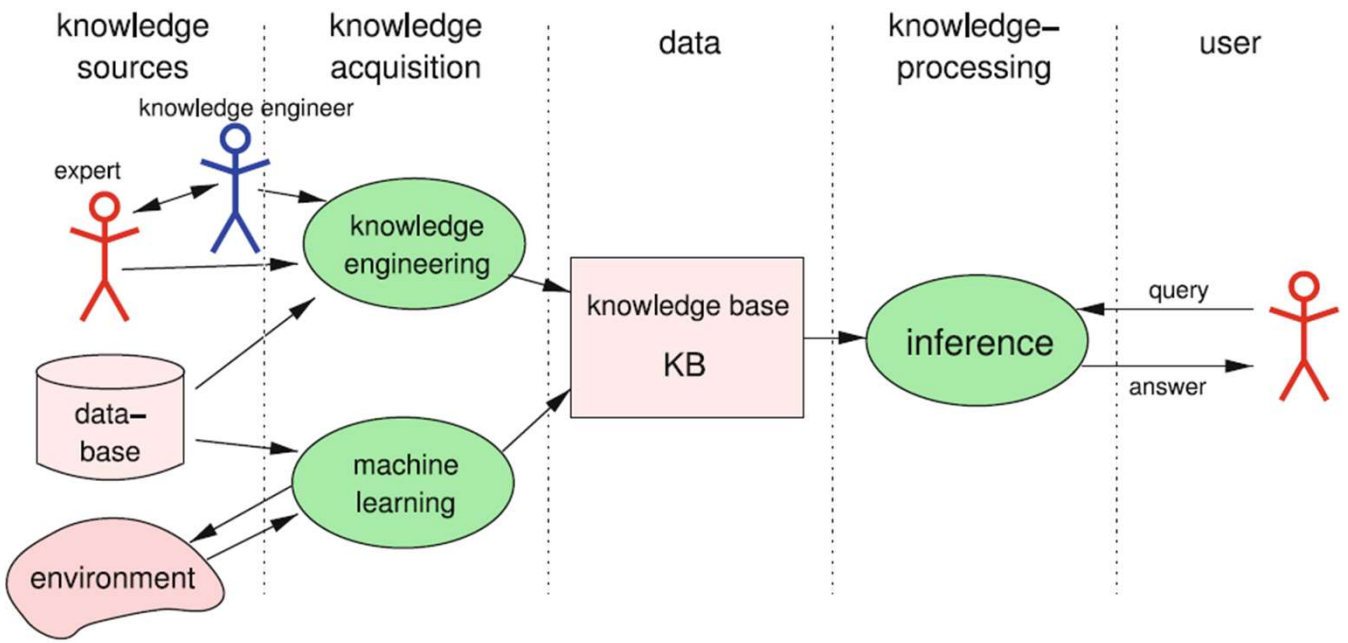
Knowledge processing system



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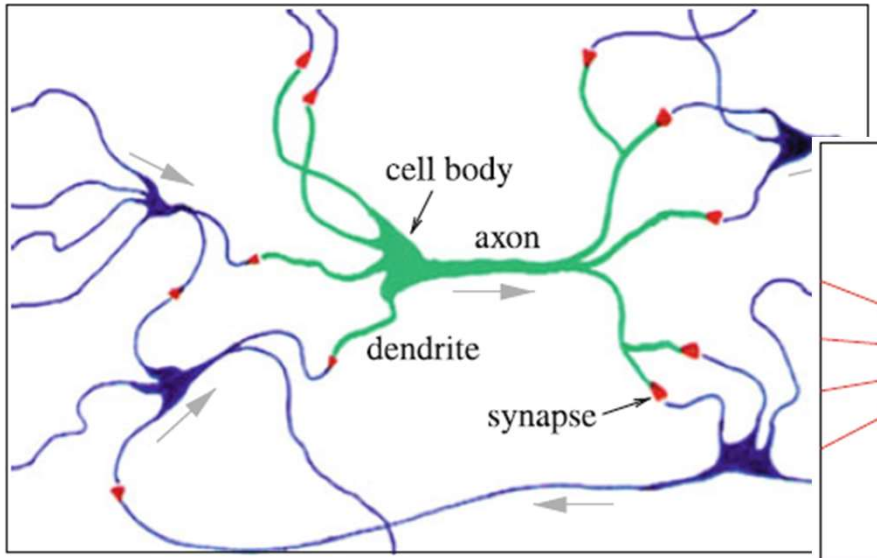
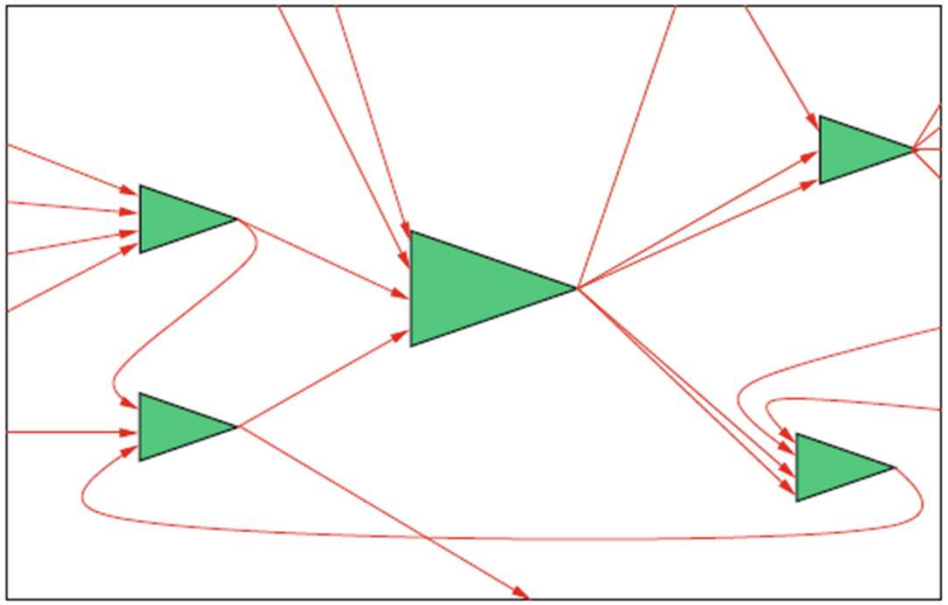
Neural networks





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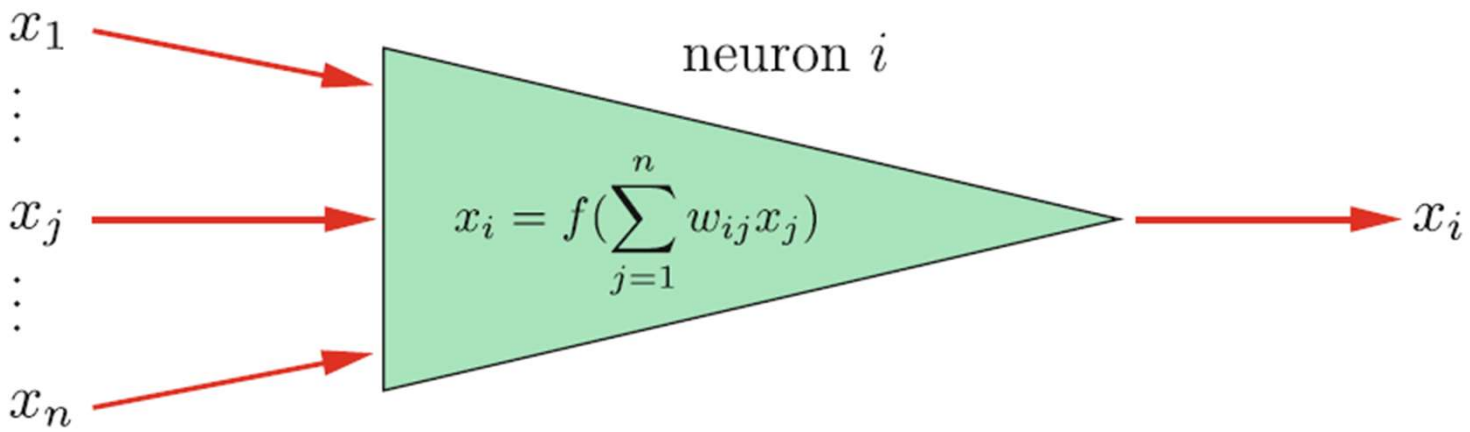
Formal neuron structure



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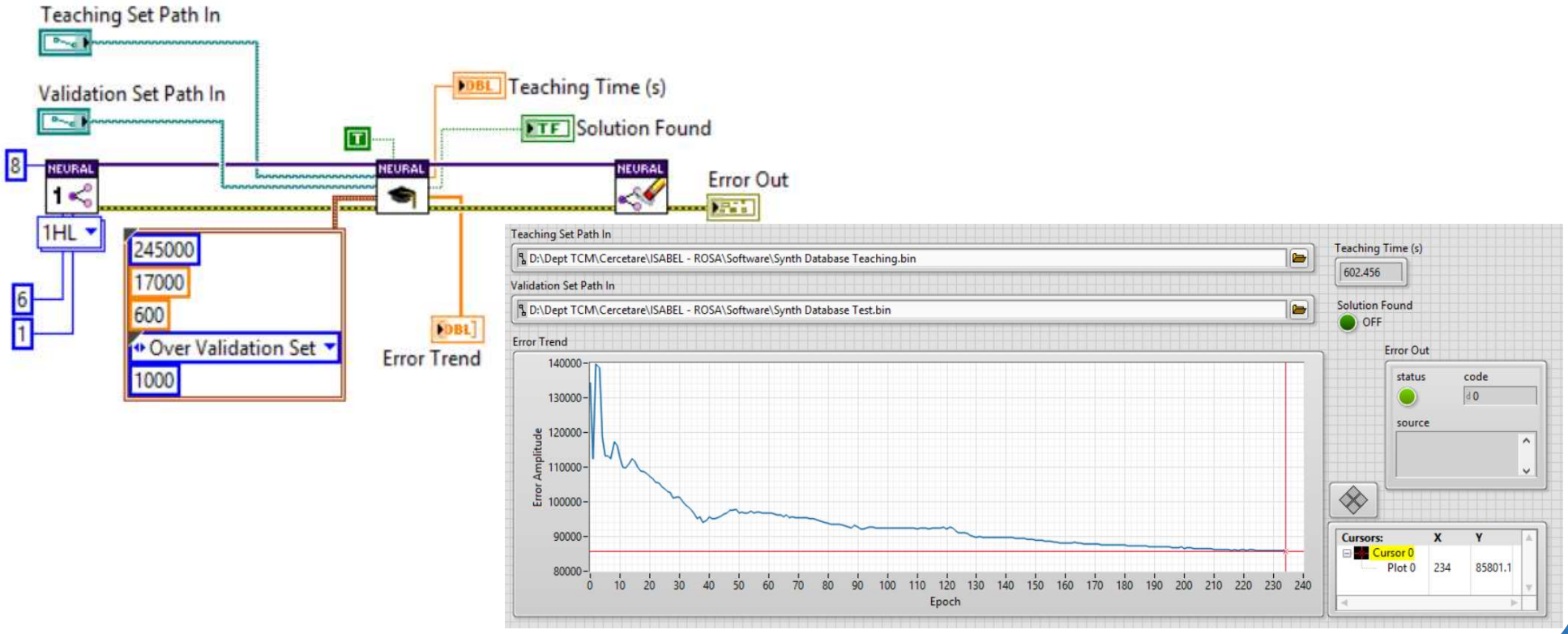
LabVIEW Neural Networks



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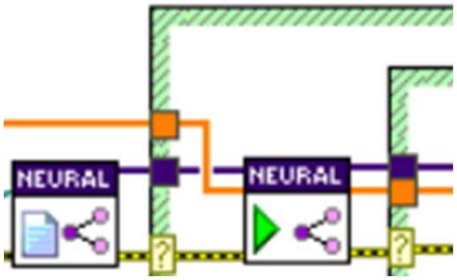
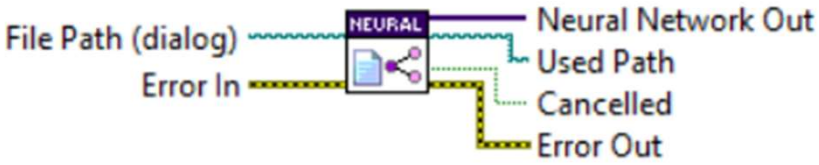
LabVIEW Neural Networks

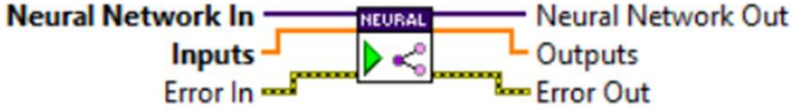


Neural Network.lvclass:Load Network from File.vi



This VI loads neural network from a file.

Neural Network.lvclass:Calculate Response.vi



This VI calculates the output values of the network based on the input values.

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Confusion matrix example

40%	Predicted			
Actual	Continental	Continental Polluted	Mineral	Smoke
Continental	411	4	2	113
ContinentalPolluted	174	207	0	33
Mineral	0	0	558	0
Smoke	52	3	0	521

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