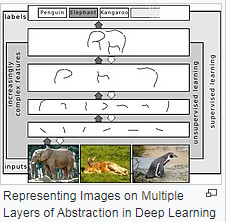
Deep learning is a subset of Machine Learning which in turn is a subset of Artificial Intelligence. AI is a technique to mimic human behavior, ML is a technique to achive AI through algorithm trained with data. Deep Learning is a type of machine learning inspired by the structure of the human brain. In terms of the deep learning this structure is called Artifical Neural network. Deep learning allows computational models that are composed of multiple processing layers to learn representations of data with multiple levels of abstraction. These methods have significantly improved the state-of-the-art in speech recognition, image recognition, object detection and many other domains such as drug detection. Deep learning discovers intricate structure in large data sets by using the backpropagation algorithm to indicate how a machine should change its internal parameters that are used to compute the representation in each layer from the representation in the previous layer. Deep convolutional nets have brought about breakthroughs in processing images, video, speech and audio, whereas recurrent nets have shone light on sequential data such as text and speech.

Deep learning is a class of [machine learning](https://en.wikipedia.org/wiki/Machine_learning) [algorithms](https://en.wikipedia.org/wiki/Algorithm) that(P1) uses multiple layers to progressively extract higher level features from the raw input. For example, in image processing, lower layers may identify edges, while higher layers may identify the concepts relevant to a human such as digits or letters or faces.



(P1)Deng, L.; Yu, D. (2014). [*"Deep Learning: Methods and Applications"*](http://research.microsoft.com/pubs/209355/DeepLearning-NowPublishing-Vol7-SIG-039.pdf) *(PDF)*. Foundations and Trends in Signal Processing. **7** (3–4): 1–199. [*doi*](https://en.wikipedia.org/wiki/Digital_object_identifier):[*10.1561/2000000039*](https://doi.org/10.1561%2F2000000039).

Convolutional NN