

11-11-2020 ANN with Keras

Q What are the advantages of using ANNs?

They are :
versatile, scalable and powerful.

Q Can you share some examples where ANNs are being used?

— Alpha Go, Google images, Siri, Youtube

Q Why is there tremendous increase in computing power since 1990?

- Moore's law: no. of integrated circuits have doubled every year in last 50 years.
- GPUs availability because of gaming industry.
- cloud computing

Q Why is there renewed interest in ANN?

- Huge amounts of data availability.
- Tremendous ↑ in computing power.
- Training algorithms have improved.
- Some theoretical limitations of ANNs have

turned out to be benign in practice.
Example :- ANNs were considered doomed because they were likely to get stuck in local optima. But it turns out that this is rare in practice. And when it happens, ANNs are fairly close to global optimum.

Q What is perceptron?

Perceptron is one of the simplest ANN architecture. It is composed of single layers of TLUs. Each TLU is connected to all the inputs. TLU is known as threshold logic unit. TLU is also known as LTU - linear threshold unit.

So perceptron consists of three special neurons - TLU.

When all neurons in a layer is connected to all neurons in previous layer, then layer is called a fully connected layer or a dense layer.

Inputs of Perceptron are fed to special pass through neurons called input neurons. They output whatever input they are fed. All the input neurons form input layer. An extra bias feature is generally added ($x_0 = 1$): It is represented by special type of neuron called a bias neuron.

Q How would a perceptron of 2 inputs, 3 outputs look like?

