1. Backpropagation:

Pass the prediction error backward from output to input layer, calculate the gradient of the weights and adjust the weights to reduce error.

1. Reduce overfitting of neural networks

* Drop out
* RegularizationMLP vs a simple neural network in tensorflow
* Early stopping

1. Iteration idea of logistic regression/linear regression, is like a **epochos** in neural networks?

CNN:

1. DNN challenges

* Too much computation
* Local pixels and far-apart pixel are treated the same
* Sensitive to the location of a object in picuture

1. Filters and convolution

* Each image has 3 dimensions, same as filters, if filters represent weights, is each dimension’s weights the same?

1. What’s benefit of padding? – mathematically
2. Sample CNN code to understand the structure