

Tutorial 3b

Convolutional Neural Networks

Shekhar “Shakes” Chandra

1 Autoencoders

Describe the concept of the autoencoder neural network, making sure to include descriptions of

1. its network architecture as a schematic
2. the goal(s) of such a network
3. its main components
4. how these components can be used separately
5. an example where it might be useful

2 Convolutional Neural Networks

A convolutional neural network (CNN) is a very powerful type of network for pattern recognition problems.

- (a) List and describe the main components of a convolutional layer within a CNN.
- (b) When is a CNN likely to be useful in pattern recognition problems and give an example.
- (c) Draw a flow chart/graph (making sure to include each layer) of a typical CNN for solving such a problem in your example above.