eCornell

CHEAT SHEET

ConvNet Cheat Sheet

Algorithm Name	Convolutional neural networks
Description	A special type of neural network that is well suited for image data.
Applicability	Any supervised learning problem (classification or regression).
Assumptions	The input is a 2D image of pixels (although 1D, 3D, and 4D variants exist).
Underlying Mathematical Principles	Perceptron Convolution layers Pooling layers Batch normalization
Open Source Implementations	PyTorch TensorFlow
Additional Details	• Training is usually done using SGD • Use cross entropy loss for classification and MSE for regression • Batch normalization is applied to make training easier • Convolution layers exploit local structures in images