Chapter 6: Deep Learning using PyTorch

**Introduction**

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# Introduction to CNN

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## Problem:

Is there any way to build sequential neural network models like we do in Keras in PyTorch, instead of declaring the neural network models?

## Solution:

Yes, it is possible as we do not have to declare the neural network model.

## How It works:

Now, let’s look at how to create such models.

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Setting up neural network for deep learning.

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Let’s print the model architecture.

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## Problem:

How to perform batch data training for a deep learning model using PyTorch?

## Solution:

Yes, it is possible to create.

## How It works:

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After training the dataset for 5 iterations, we can print the batch and step.

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If we take the batch size as 8 and re-train the model.

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## Problem:

How to identify the best solution based on learning rate, batch size and number of epochs.

## Solution:

We will take a sample tensor and apply various alternative models and print model parameters.

## How It works:

First, the necessary library needs to be imported.

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The sample dataset taken for the experiment includes the following.

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Sample dataset and first 5 record would look like as below.

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Using the PyTorch utility function let’s load the tensor dataset, introduce the batch size, and test out.

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Declaring the neural network module.

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Now, let’s look at the network architecture.

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While performing the optimization also we can include many options, select the best among the best.

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## Problem:

How to perform parallel data training using PyTorch, that includes a lot of models?

## Solution:

The optimizers are really functioning that augment the tensor.

## How It works:

First, the necessary library needs to be imported.

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Let’s see the chart and epochs.

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