

Training with PYTORCH

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Outline

1. Advantages of PYTORCH on the Training Process
2. Tensors - Central data abstraction in PyTorch.
3. Training Process - Basic Building Blocks
4. What is an Image Classifier?
5. Train a small Neural Network

Why to choose pytorch for training?

- PyTorch is a Python-based scientific computing package serving:
 - A NumPy-like data structure to use the **power of GPUs** and other accelerators.
 - An **automatic differentiation** library
 - Ease of use

What are Tensors?

- Tensor :
 - Specialized data structure, very similar to matrices
 - Optimized for automatic differentiation
 - Handles gradient calculations automatically.
 - Can run on GPUs or other hardware accelerators

Training Process

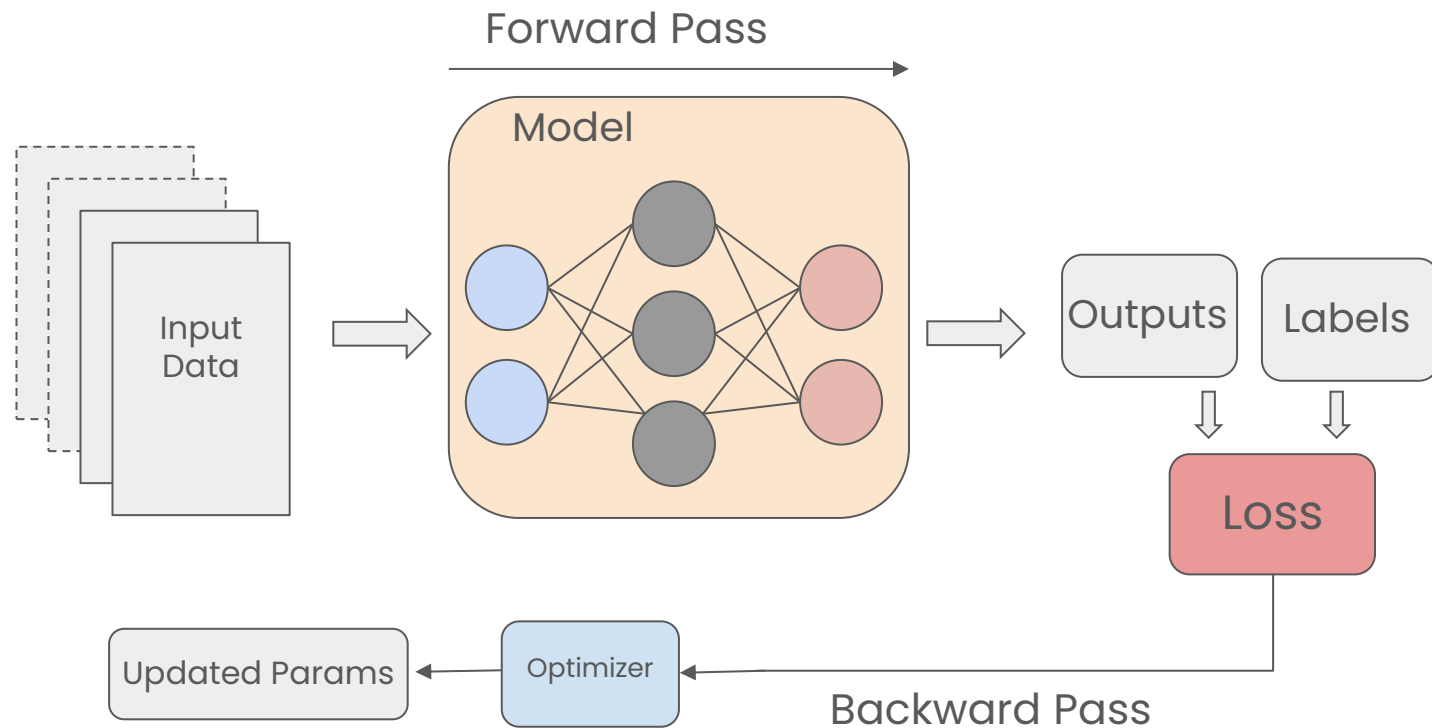
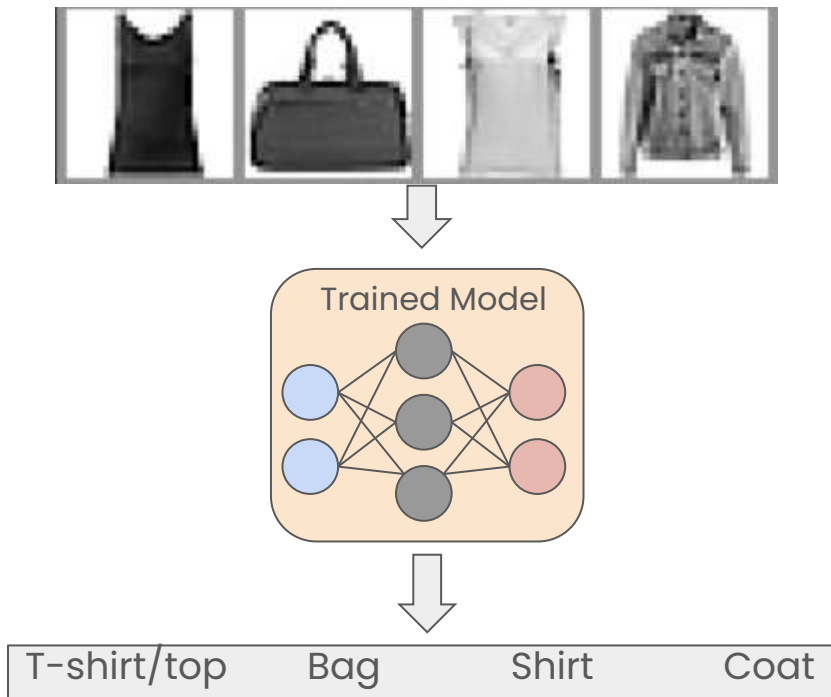


Image Classifier

- Image classification assigns a label or class to an image.



References

<https://huggingface.co/tasks/image-classification>

https://pytorch.org/tutorials/beginner/blitz/autograd_tutorial.html

https://pytorch.org/tutorials/beginner/basics/quickstart_tutorial.html#loading-models

https://pytorch.org/tutorials/beginner/deep_learning_60min_blitz.html

https://pytorch.org/tutorials/beginner/blitz/tensor_tutorial.html

https://pytorch.org/tutorials/beginner/blitz/neural_networks_tutorial.html

https://pytorch.org/tutorials/beginner/blitz/cifar10_tutorial.html