PyTorch Tutorial

INF8245E - Machine Learning & INF8953DE - Reinforcement Learning 27th October, 2021

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Introduction

- 1. Research Engineer at Facebook Al Research
- 2. Focusing on lifelong learning and reinforcement learning
- 3. Using and talking about PyTorch for about 3 years now

Questions are welcome at all times:)

Agenda

1. PyTorch in Action

2. PyTorch Ecosystem

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2. PyTorch Ecosystem

Colab Notebook

Note: This slide is based on PyTorch 1.9.1

PyTorch Tutorials

WELCOME TO PYTORCH TUTORIALS

Learn the Basics

Familiarize yourself with PyTorch concepts and modules.

Learn how to load data, build deep neural networks, train and save your models in this quickstart guide.

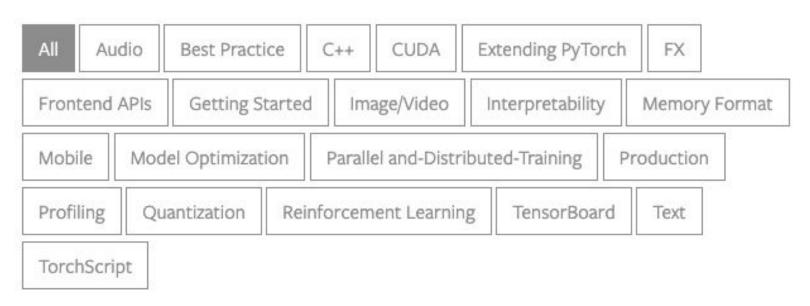
Get started with PyTorch >

PyTorch Recipes

Bite-size, ready-to-deploy PyTorch code examples.

Explore Recipes >

PyTorch Tutorials



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1. PyTorch in Action

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PyTorch Ecosystem

- 100+ featured projects, tools, and libraries
- Developed by researchers in academia and industry, application developers, and ML engineers.
- https://pytorch.org/ecosystem/

Machine Learning

skorch

skorch is a high-level library for PyTorch that provides full scikit-learn compatibility.

Machine Learning

PyTorch Lightning

PyTorch Lightning is a Keras-like ML library for PyTorch. It leaves core training and validation logic to you and automates the rest.

Machine Learning

Poutyne

Poutyne is a Keras-like framework for PyTorch and handles much of the boilerplating code needed to train neural networks.

Vision

TORCHVISION

The torchvision package consists of popular datasets, model architectures, and common image transformations for computer vision.

Vision

Albumentations

Fast and extensible image augmentation library for different CV tasks like classification, segmentation, object detection and pose estimation.

Vision

Kornia

Kornia is a differentiable computer vision library that consists of a set of routines and differentiable modules to solve generic CV problems.

NLP

AllenNLP

AllenNLP is an open-source research library built on PyTorch for designing and evaluating deep learning models for NLP.

Graph

DGL

Deep Graph Library (DGL) is a Python package built for easy implementation of graph neural network model family, on top of PyTorch and other frameworks.

Graph

PyTorch Geometric

PyTorch Geometric is a library for deep learning on irregular input data such as graphs, point clouds, and manifolds.

Model Interpretability

Captum

Captum ("comprehension" in Latin) is an open source, extensible library for model interpretability built on PyTorch.

Privacy Preserving ML

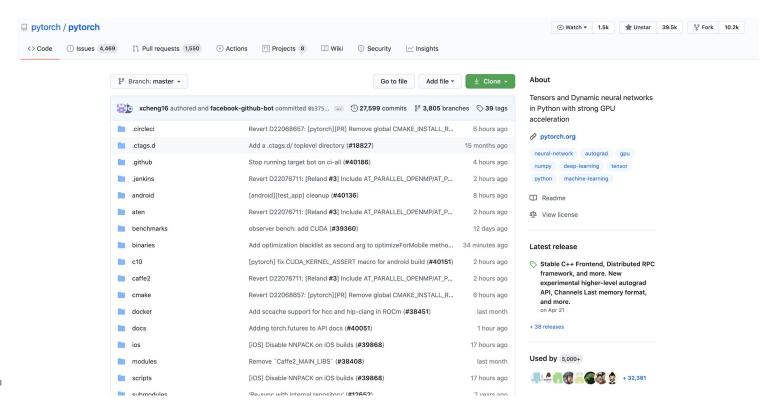
CrypTen

CrypTen is a framework for Privacy Preserving ML. Its goal is to make secure computing techniques accessible to ML practitioners.

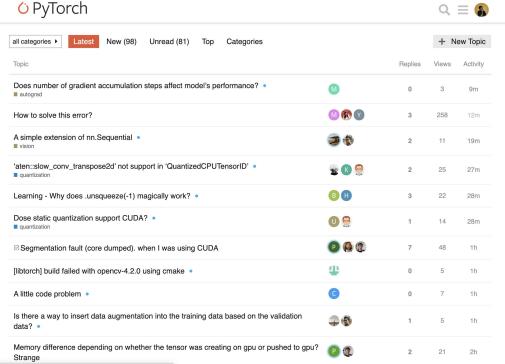
PyTorch Hub

```
model = torch.hub.load('pytorch/vision', 'resnet18',
pretrained=True)
```

Community



Community



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Thank you

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