Idea Factory Intensive Program #2

딥러닝 홀로서기

#12

이론강의/PyTorch실습/코드리뷰

딥러닝(Deep Learning)에 관심이 있는 학생 발굴을 통한
딥러닝의 이론적 배경 강의 및 오픈소스 딥러닝 라이브러리 PyTorch를 활용한 실습

Today's Time Schedule

Assignment #1 Review

How to Parameterize Entire Code

How to Run Code with GPU!

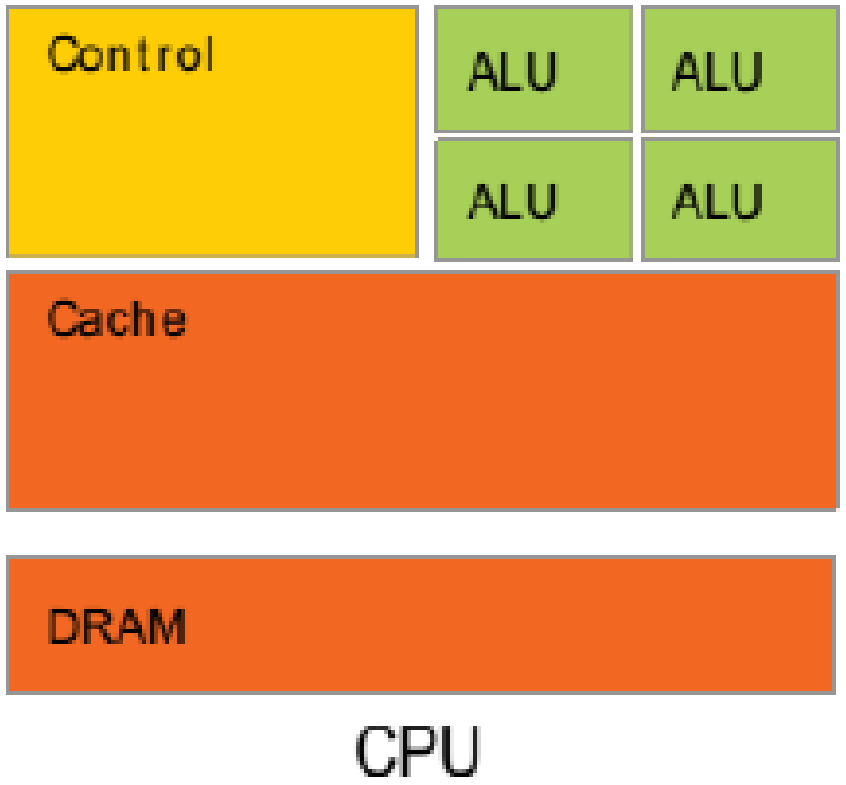
1 hour?

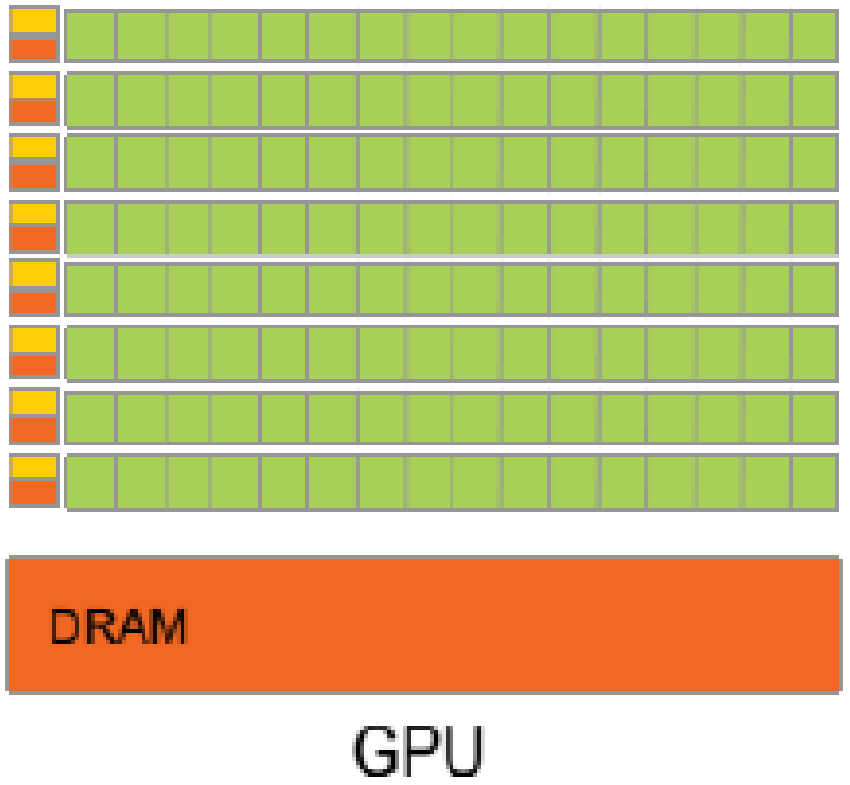
How to Overcome Overfitting — 1 hour

Big Wave: Hyperparameter Tuning — 2 hour

CPU is Slow. GPU is SuperFast.

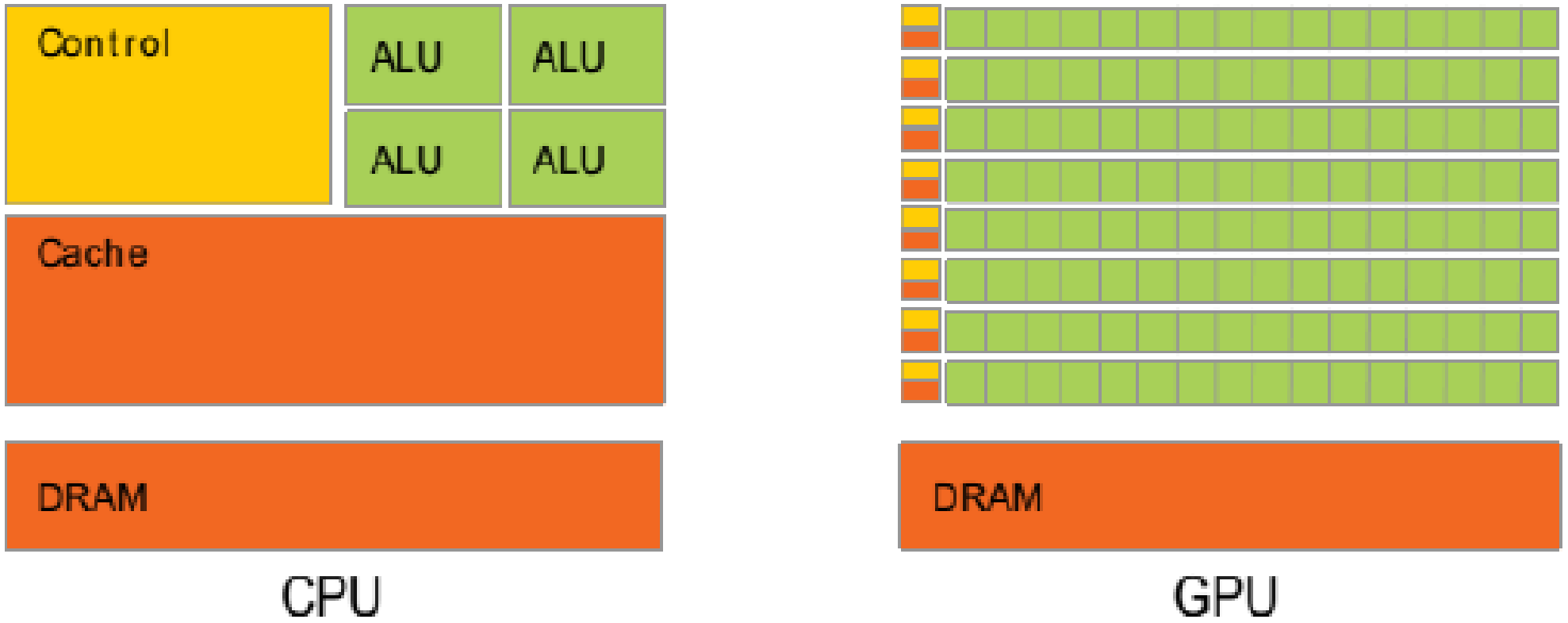
CPU vs GPU Architecture





https://www.researchgate.net/profile/Roshan_Ragel/publication/270222593/figure/fig1/AS:295022265159684@1447350197467/CPU-vs-GPU-Architecture.png

CPU vs GPU Architecture



GPU is designed to boost parallel matrix operation

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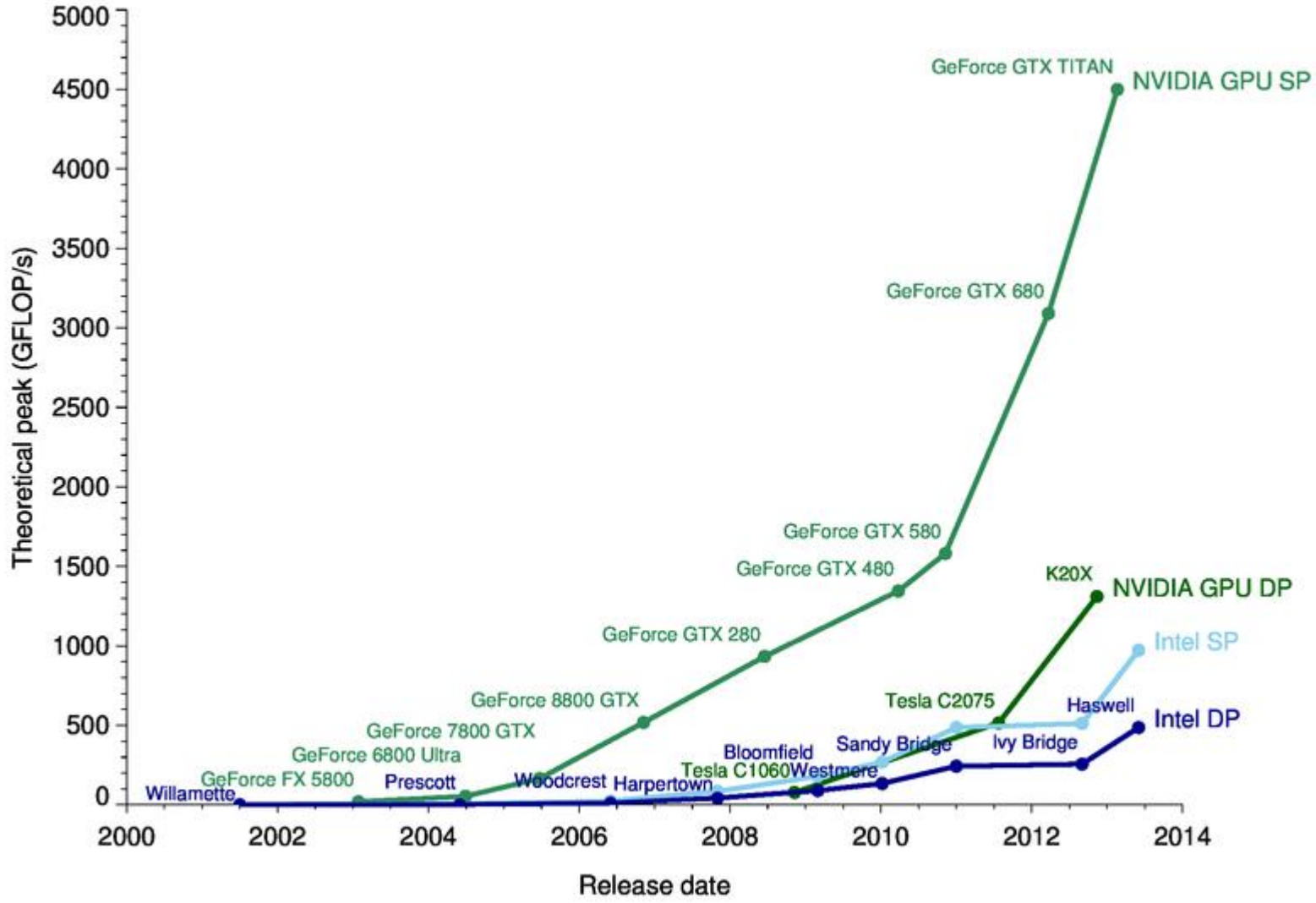

http://michaelgalloy.com/wp-content/uploads/2013/06/cpu-vs-gpu.png

How to use GPU with Pytorch?

```
model=MLPModel(784, 10, [1000])
device = torch.device('cuda:0' if torch.cuda.is_available() else 'cpu')
model.to(device)
```

How to use GPU with Pytorch?

```
model=MLPModel(784, 10, [1000])
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```

```
input_X = input_X.to(device)
true_y = true_y.to(device)
input_X = input_X.squeeze()
input_X = input_X.view(-1, 784)

pred_y = model(input_X)
```

Summary

- Let's use GPU if you have available one (e.g. Google Colab)
- Pytorch is awesome!