Intro to Computer Vision through Fast.ai

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Computer Vision Basics

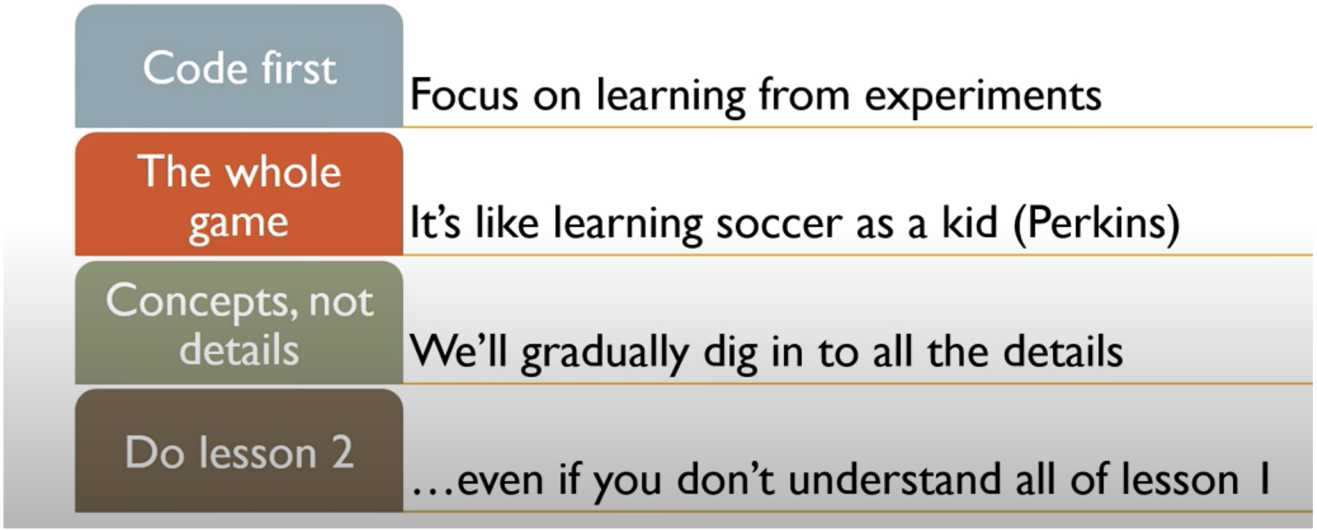
- Computer vision is the process of using machines to understand and analyze imagery (both photos and videos).
  - **Object classification:** train a model on a dataset of specific objects, and the model classifies new objects as belonging to one or more of your training categories.
  - **Object identification**, your model will recognize a specific instance of an object - for example, parsing two faces in an image and tagging one as Kanye West and one as Beyonce.
- Machines interpret images simply: as a series of pixels, each with their own set of color values.
- Great Resource for Computer Vision

Fast.ai

- Today we're going through the 2019 version of the Fast.ai course for Lesson 2(video here)
- Highly recommend checking out the most recent version of the Fast.ai course, if you want to build more complex projects
- For the 2020 release of the course, they have a book (.pdf version online)

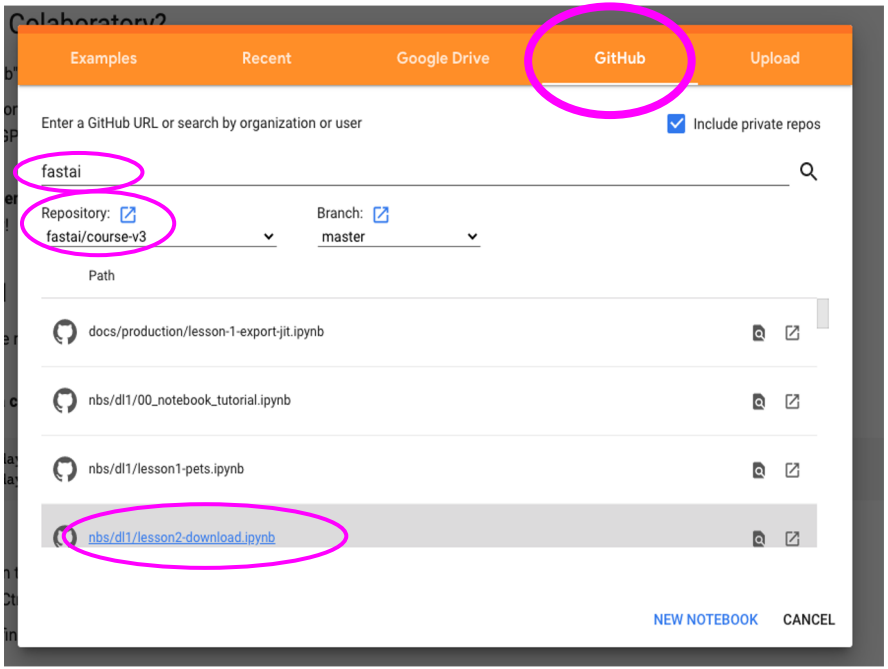
Fast.ai Approach

IF YOU'RE STUCK, KEEP GOING!



Let's Build! - Setup

1. Go to the CoLab website (https://colab.research.google.com)
2. Select GitHub
3. Type "fastai" in the search bar
4. Under repository, select "fastai/course-v3"
5. Select nbs/dl1/lesson2-download.ipynb
6. Save a copy of the notebook in Google Drive



Let's Build! - Setup

1. Open up your notebook
2. Mount your google drive to your notebook - This will allow you to import your google search images
3. Click **Connect** in the top right corner
4. Add in this piece of code at the top of your notebook
    a. *There's a bug when running the newer version of pytorch*


```
!pip uninstall torch torchvision -y
!pip install torch==1.4.0 torchvision==0.5.0
```

We'll be working in the CoLab notebook

If you want to learn more about the code behind today's lesson - check out the Fasiai Documentation

To learn more about Deep Learning, check out all of the fast.ai courses.

To learn about convolutional neural networks check out Siraj Raval's explanation

Questions?

Here's the link to my notebook I used which has more explanations on deep learning