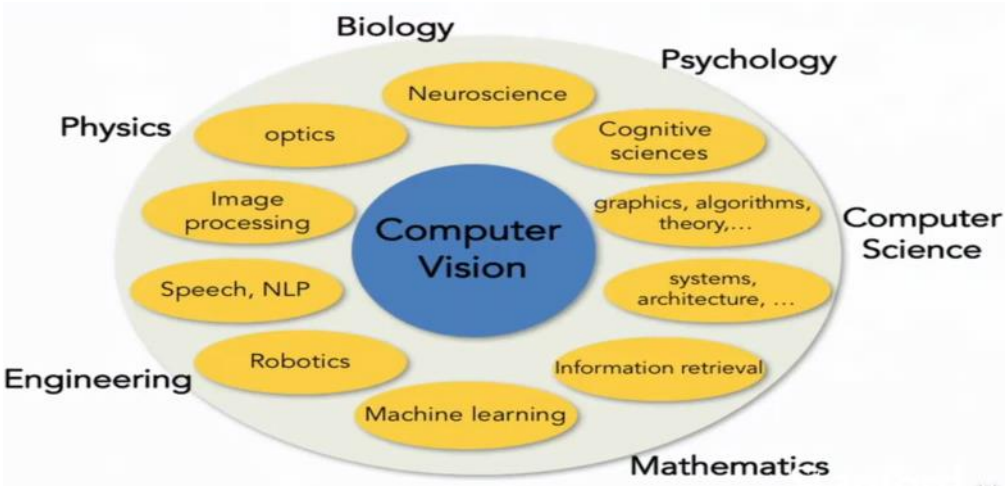
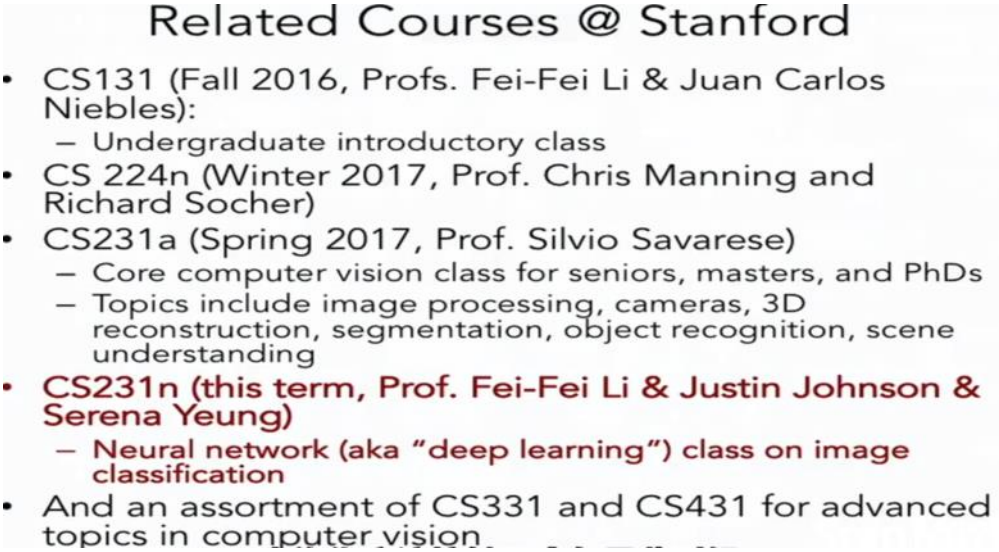
# 第一讲 **课程简介**

2019年4月18日 14:58

## 1.计算机视觉概述




**1.1 计算机视觉分类**




**1.2 先知课程**

## 2.历史回顾

### 2.1 计算机视觉历史回顾

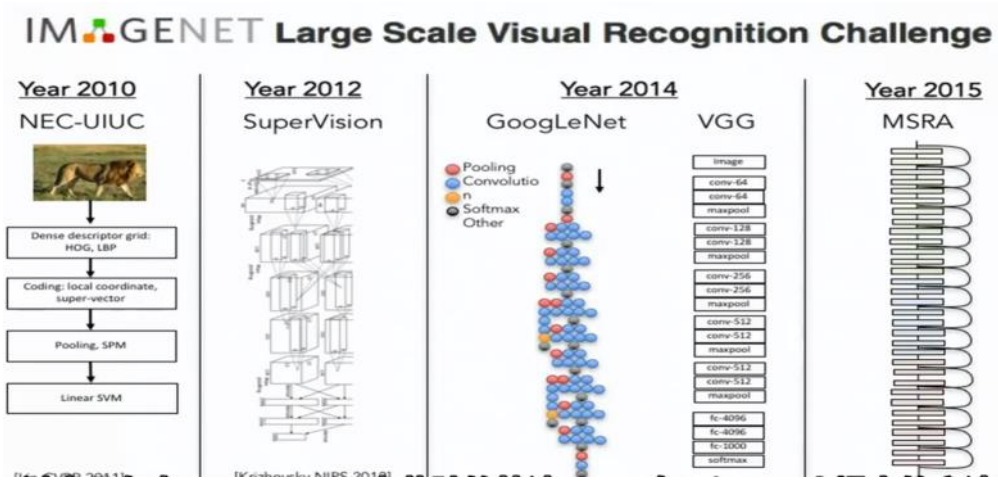
### 2.2 ImageNet 相关

http://www.image-net.org/

## 3.课程逻辑顺序

### 3.1 课程第一个涉及到的计算机视觉问题是Image classification 比如object detection，image captioning。

## 3.2 ImageNet大赛 历年获胜算法




3.1 获胜算法

## 3.3 计算机视觉开放性问题

PT = 500ms

Some kind of game or fight. Two groups of two men? The man on the left is throwing something. Outdoors seemed like because i have an impression of grass and maybe lines on the grass? That would be why I think perhaps a game, rough game though, more like rugby than football because they pairs weren't in pads and helmets, though I did get the impression of similar clothing. maybe some trees? in the background. (Subject: SM)

**3.2 为什么人能在0.5秒一闪而过的图像中描述这个场景？机器应该如何做？**

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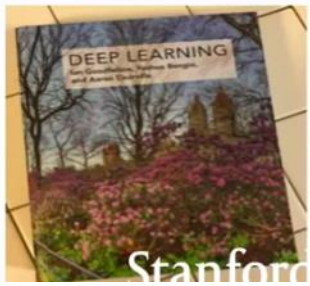
**3.3 隐藏在图片中的信息如何被机器理解**

## 3.4 推荐书籍

**Deep Learing**

- Optional textbook:
  - *Deep Learning* by Goodfellow, Bengio, and Courville
  - Free online




## 3.5 学习目标和方法

# Our philosophy

- Thorough and Detailed.
  - Understand how to write from scratch, debug and train convolutional neural networks.
- Practical.
  - Focus on practical techniques for training these networks at scale, and on GPUs (e.g. will touch on distributed optimization, differences between CPU vs. GPU, etc.) Also look at state of the art software tools such as Caffe, TensorFlow, and (Py)Torch
- State of the art.
  - Most materials are new from research world in the past 1-3 years. Very exciting stuff!
- Fun.
  - Some fun topics such as Image Captioning (using RNN)
  - Also DeepDream, NeuralStyle, etc.