CS231n(1강)

최민우

• Computer Vision can be applied

Physics, Engineering, Mathematics, Computer Science, Psychology, Biology

1.A Brief History of Computer Vision

- About 543 million years ago, Earth was mostly water
- About 540 million years ago, First animals developed eyes and the onset of vision
- Animals haf to evolve quickly in order to survive

1966, Summer Vision Project(MIT)

2.3D model

- Input Image
- Primal Sketch
- 2.5D Sketch
- 3D Model Representation

3.Generalized Cylinder(1979) & Pictorial Structure

- The basic idea is that every object is composed of simple geometric primitives

4.Machine Learning(1999-2000)

- Especially statistical machine learing techniques start to gain momentum
- momentum : SVM, Boosting graphical models
- AdaBoost Algorithm : Face Detection에 기여

5.ImageNet

- Machine Learning이 많은 것을 기여
- 트레이닝과 밴치마킹
- Image Input -> Five Output
- Convolutional Neural Networks가 많은 것을 기여

6.Computer Vision Overview

- Focus : Image classification

7.a number of visual recognition problems(Image classification)

- object detection, image captioning

8.a number of visual recognition solutions(object recognition)

- Convolutional Neural Networks : important tool

9.Large Scale Visual Recognition Challenge

- 2010 : NEC-UIUC
- 2012 : SuperVision
- 2014 : GoogleNet
- 2015 : MSRA

10.Open Challenge

11.Computer Vision Technology Can Better Our Lives

- Medical Diagnosis
- Self-Driving Cars
- Robotica
- Idea of Understanding Human Intelligence

12.Our Philosophy

- Fun : Some fun topic such as Image Captioning(using RNN)
- Also DeepDream, NeuralStyle, etc