Kissipo Learning for Deep Learning
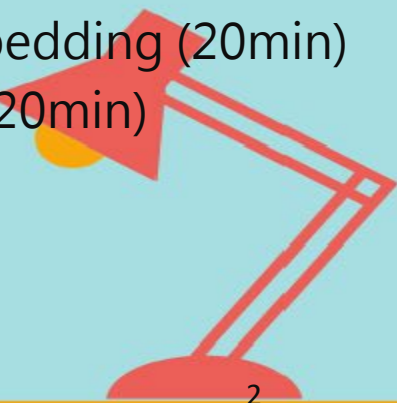
Topic 7: OpenCV quick tutorial (15min)

Hsueh-Ting Chu

KLDL-W2-T7

Topics

- Topic 01: Introduction to Deep Learning (20min)
- Topic 02: Kissipo Learning for Deep Learning (20min)
- Topic 03: Python quick tutorial (20min)
- Topic 04: Numpy quick tutorial (15min)
- Topic 05: Pandas quick tutorial (15min)
- Topic 06: Scikit-learn quick tutorial (15min)
- Topic 07: OpenCV quick tutorial (15min)
- Topic 08: Image Processing basics (20min)
- Topic 09: Machine Learning basics (20min)
- Topic 10: Deep Learning basics (20min)
- Topic 11: TensorFlow overview (20min)
- Topic 12: CNN with TensorFlow (20min)
- Topic 13: RNN with TensorFlow (20min)

- Topic 14: PyTorch overview (20min)
- Topic 15: CNN with PyTorch (20min)
- Topic 16: RNN with Pytorch (20min)
- Topic 17: Introduction to AOI (20min)
- Topic 18: AOI simple Pipeline (A) (20min)
- Topic 19: AOI simple Pipeline (B) (20min)
- Topic 20: Introduction to Object detection (20min)
- Topic 21: YoloV5 Quick Tutorial (20min)
- Topic 22: Using YoloV5 for RSD (20min)
- Topic 23: Introduction to NLP (20min)
- Topic 24: Introduction to Word Embedding (20min)
- Topic 25: Name prediction project (20min)

Content

- Topic 07: OpenCV quick tutorial (15min)
  - Introduction to OpenCV
  - OpenCV VideoCapture
  - OpenCV applications
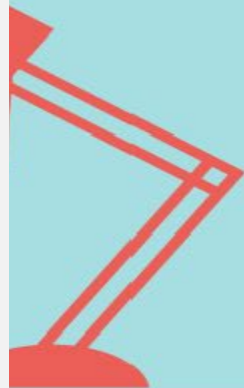 - YOLO Object Detection with OpenCV

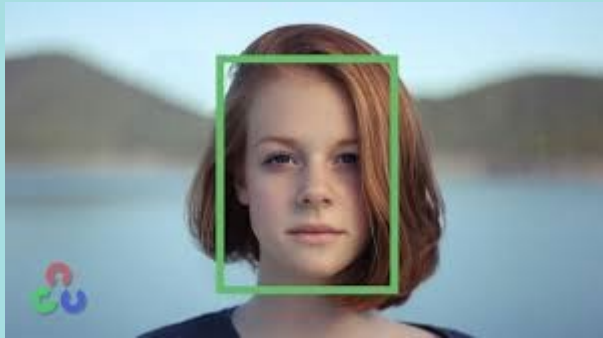# OpenCV
Open Source Computer Vision Library

OpenCV VideoCapture

```python
import cv2
cap = cv2.VideoCapture(0)
if not cap.isOpened():
    print("Cannot open camera")
    exit()
while True:
    # Capture frame-by-frame
    ret, frame = cap.read()
    # if frame is read correctly ret is True
    if not ret:
        print("Can't receive frame (stream end?). Exiting ...")
        break
    # Our operations on the frame come here
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    # Display the resulting frame
    cv2.imshow('frame', gray)
    if cv2.waitKey(1) == ord('q'):
        break
# When everything done, release the capture
cap.release()
cv2.destroyAllWindows()
```
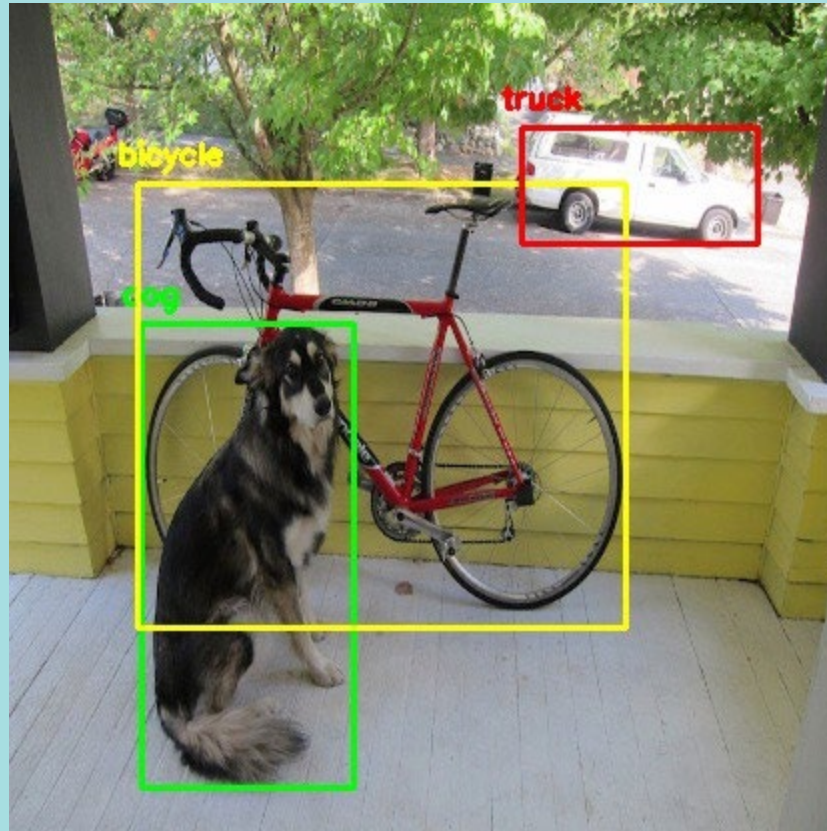
OpenCV applications

face recognition

motion detection

pose detection

YOLO Object Detection with OpenCV

Thanks! Q&A