

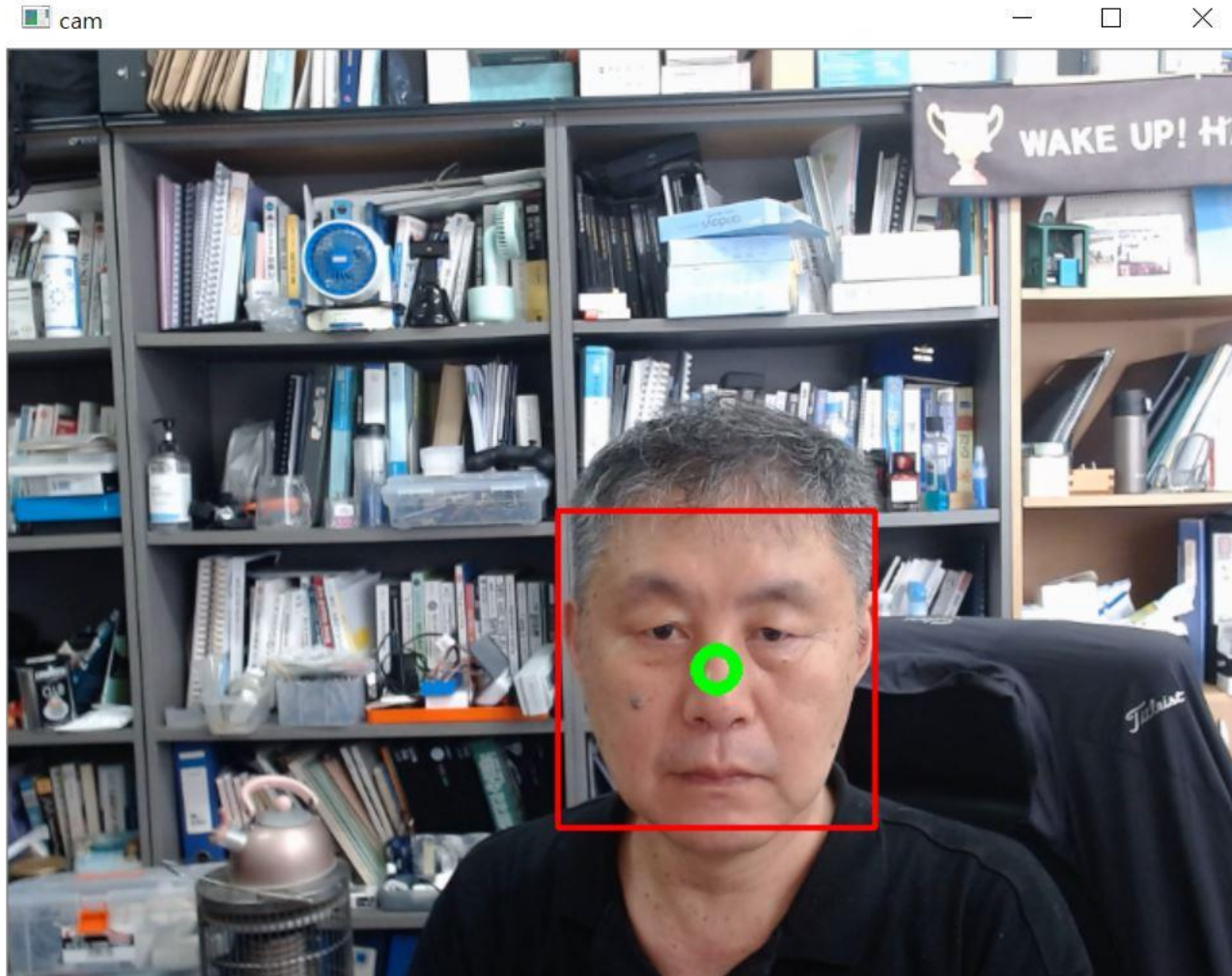
파이썬 기반 AI 드론 코딩

동의과학대학교
인공지능컴퓨터정보과
김 종 현 교수 jkim@dit.ac.kr

Face Detection AI 알고리즘

- Haar Cascade
 - https://github.com/opencv/opencv/blob/master/data/haarcascades/haarcascade_frontalface_default.xml
- Dlib : HOG + CNN
 - <https://github.com/davisking/dlib>
- MTCNN
 - <https://github.com/ipazc/mtcnn>
- OpenCV DNN : Caffe based DNN
 - https://github.com/opencv/opencv/tree/master/samples/dnn/face_detector

Opencv Face Detection



Opencv Face Detection

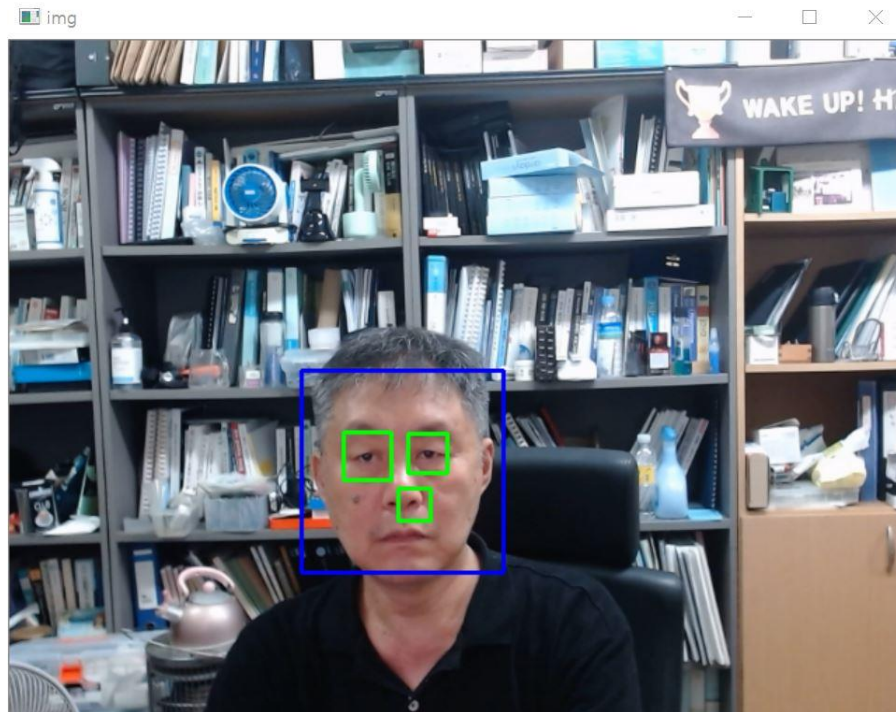
- pre-training model 다운로드
 - <https://github.com/opencv/opencv/blob/master/data/haarcascades>
- findFace 01
 - <https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/findFace01.py>
- findFace 02
 - <https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/FindFace02.py>

Face Detection & File Save

- VideoWriter()
- 소소 : https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/Video_Writer_Test.py
- 실습 01
 - Haar Cascade Face Detection 비디오 스트림을 파일(avi)로 저장하시오.

Opencv Face, Eyes Detection

- 이미지 :
 - https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/cascade_image_cv.py
- 비디오 :
 - https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/cascade_face_eye.py



Tello 드론 Face Detection

- 실습 02
 - Opencv 웹캠 비디오 스트림 입력을 Tello 드론 카메라 입력으로 수정하시오.
 - FindFace() 함수 구현
- 소스
 - <https://github.com/DIT-AI-Drone-Course/SOURCE/blob/main/Day04/findFaceTello01.py>
- 실습 03
 - 실습 02를 사용하여 드론 비디오 스트림을 파일로 저장하시오
 - VideoWriter(), imshow()

구글 MediaPipe

- <https://google.github.io/mediapipe/>

ML solutions in MediaPipe

