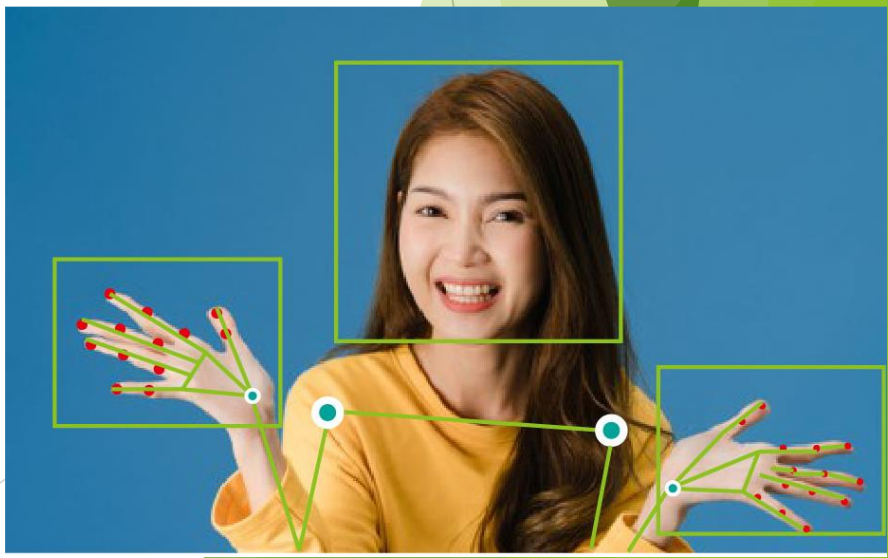
MediaPipe

- MediaPipe offers cross-platform, customizable ML solutions for live and streaming media.
- Python3.7 or above required
- pip install mediapipe
  (In Colab: ! pip install mediapipe)
- Testing:

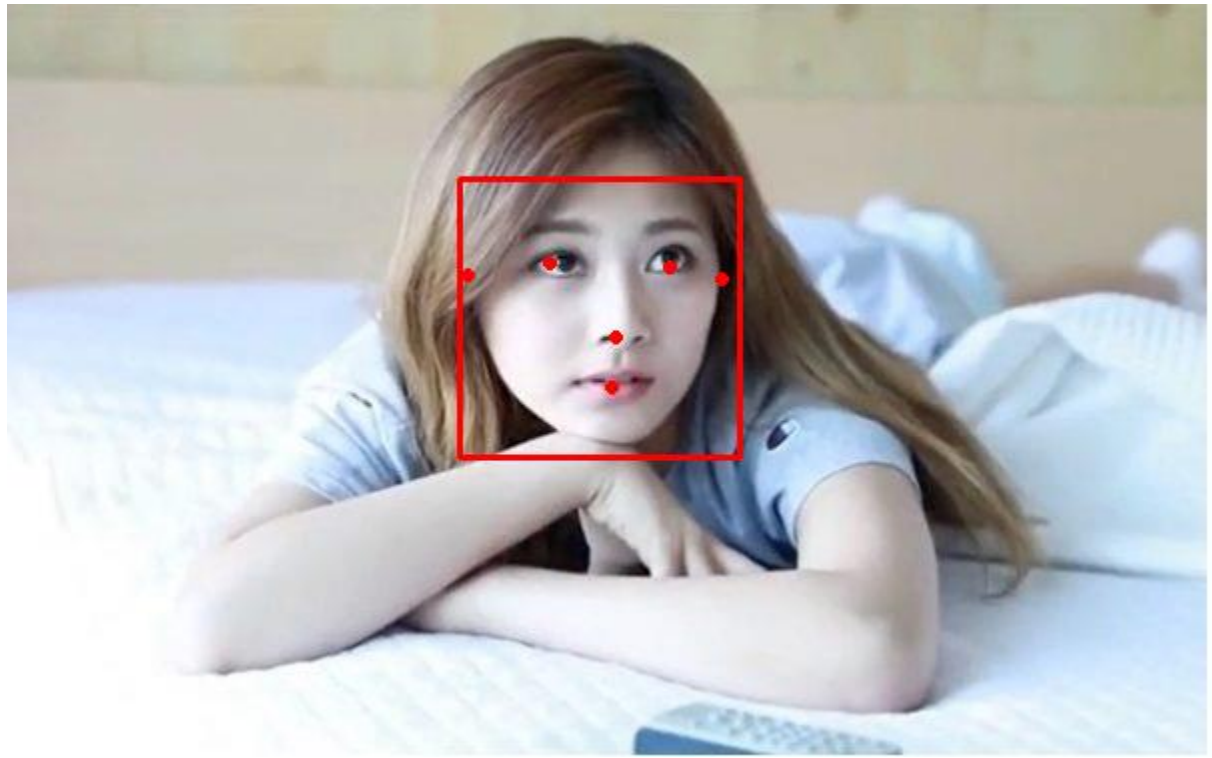
```
import mediapipe as mp
mp_face_mesh = mp.solutions.face_mesh
```



	Android	iOS	C++	Python
Face Detection	✅	✅	✅	✅
Face Mesh	✅	✅	✅	✅
Iris	✅	✅	✅	
Hands	✅	✅	✅	✅
Pose	✅	✅	✅	✅
Holistic	✅	✅	✅	✅
Selfie Segmentation	✅	✅	✅	✅
Hair Segmentation	✅		✅	
Object Detection	✅	✅	✅	
Box Tracking	✅	✅	✅	
Instant Motion Tracking	✅			
Objectron	✅		✅	✅
KNIFT	✅			
AutoFlip			✅	
MediaSequence			✅	
YouTube 8M			✅	

人臉檢測

- 透過6個點定位人的臉部，分別是右眼、左眼、鼻子、嘴巴中央、靠近右耳臉邊與靠近左耳臉邊



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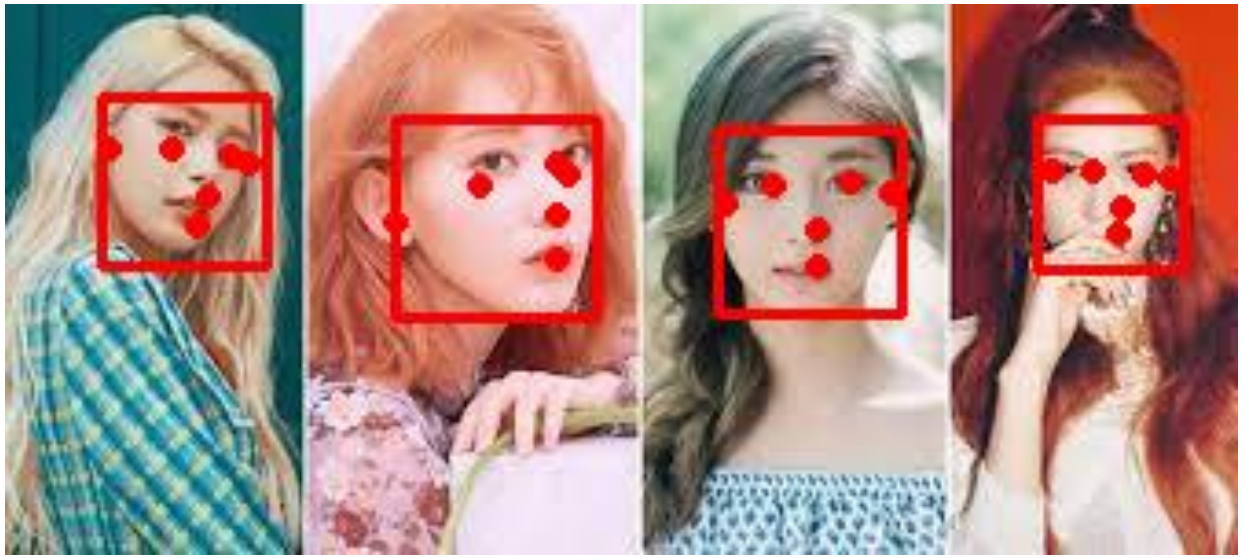
人臉數目偵測



total number: 4

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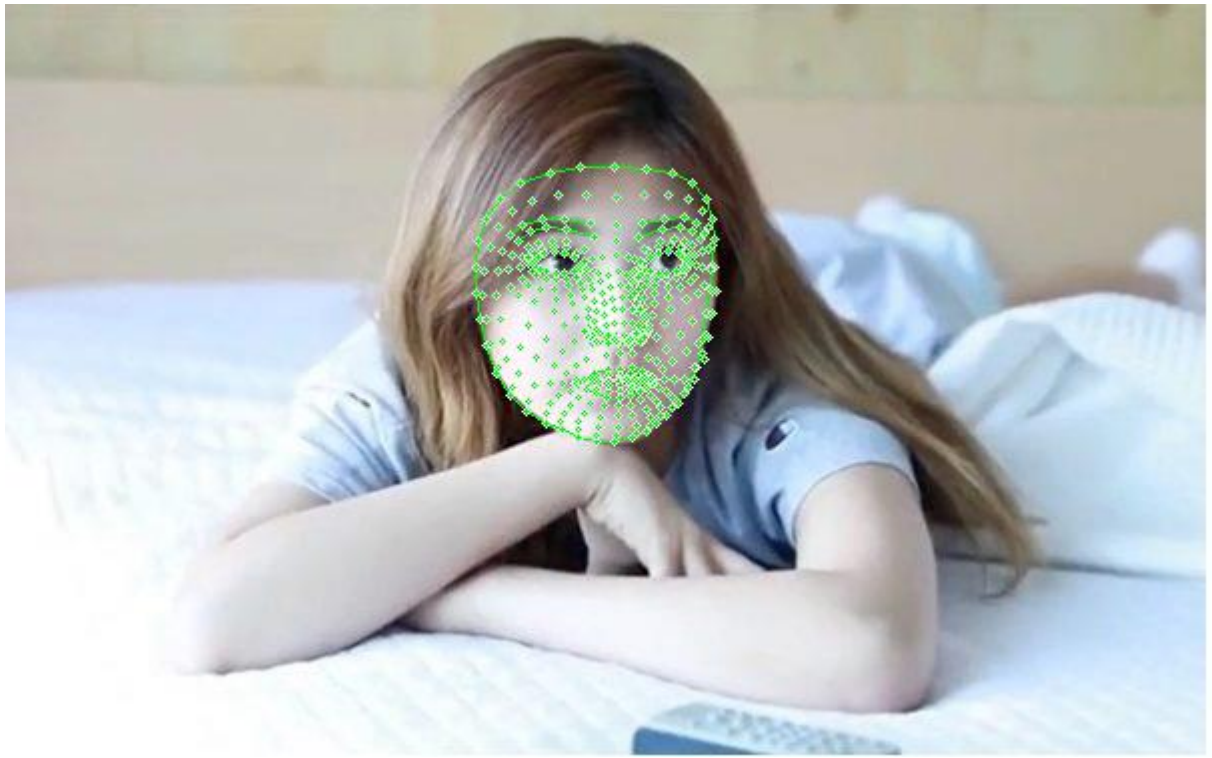
Face mesh-468點



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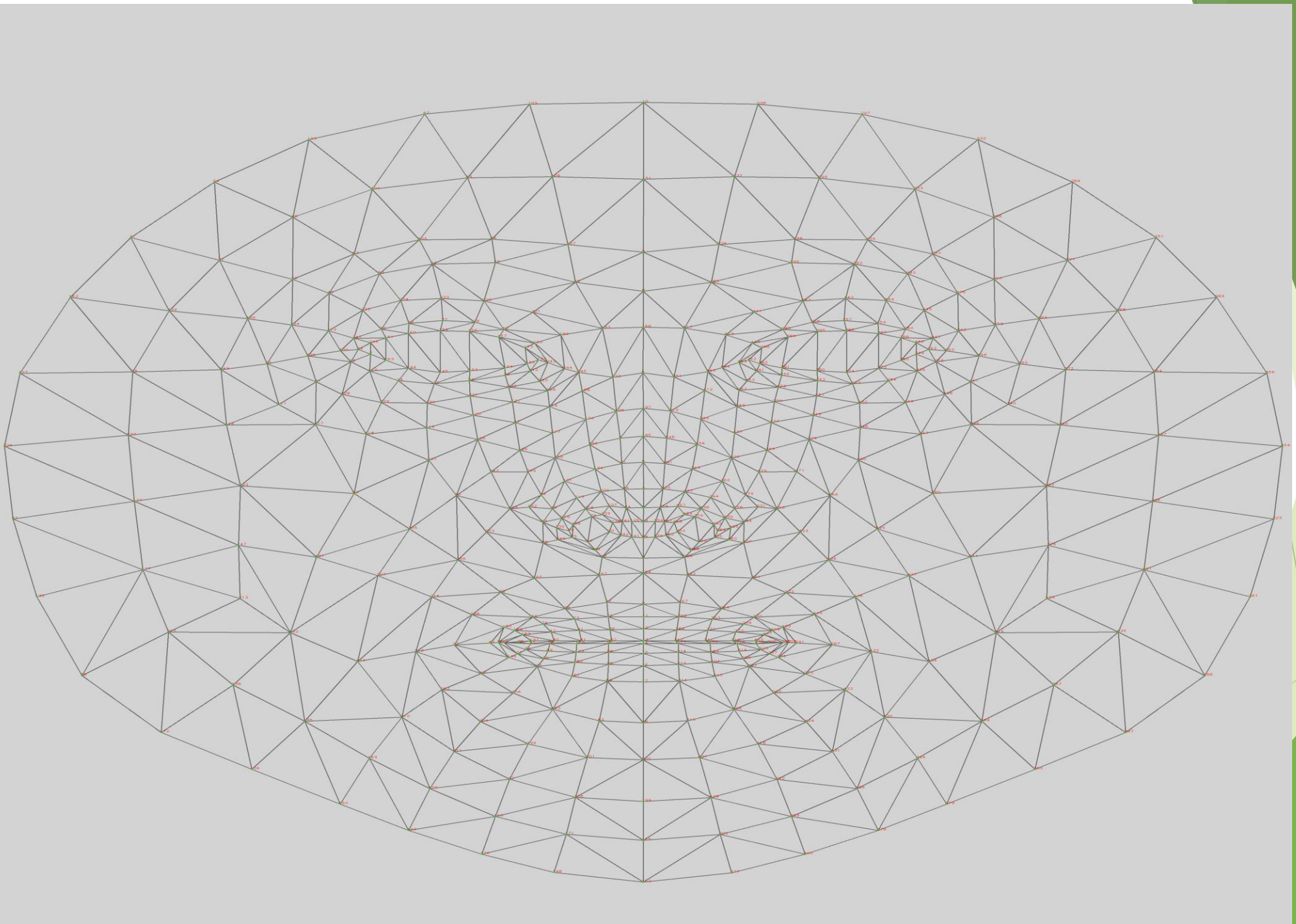
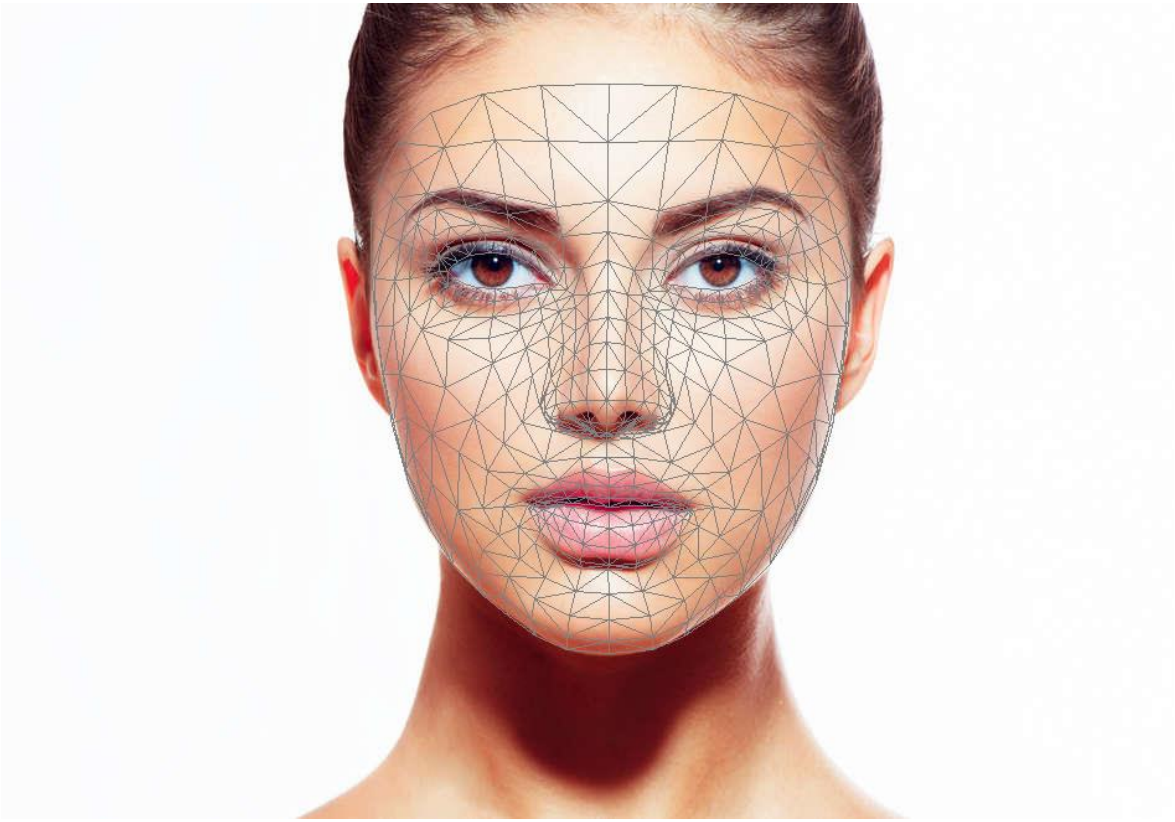


Face mesh2



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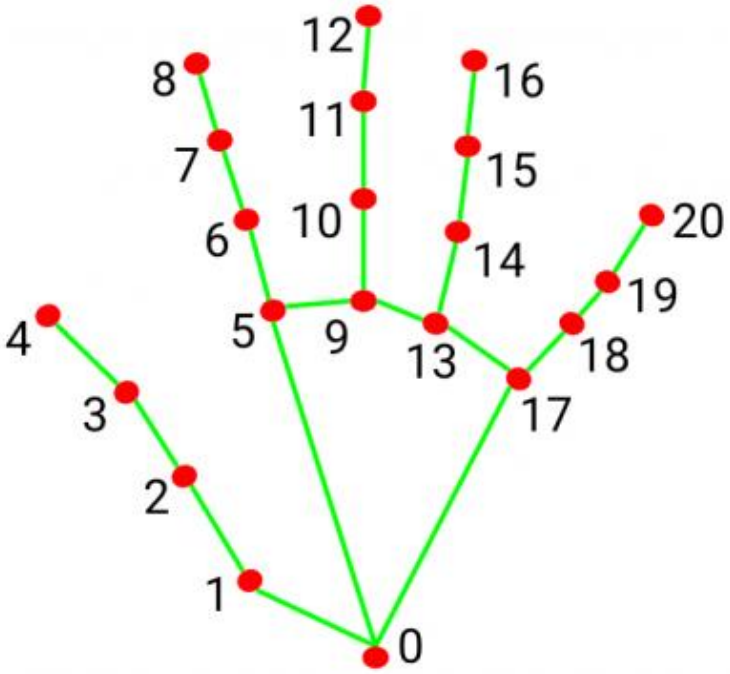
Face mesh3

https://colab.research.google.com/drive/1bOHfMMychjjX0gr28Bvbjs-NobPsuyVi?usp=sharing

眼睛貼圖

https://colab.research.google.com/drive/1v5I89jG18RBdP7YbcEB4R9gv6Zs03a-O?usp=sharing

手勢辨識



0. WRIST
1. THUMB_CMC
2. THUMB_MCP
3. THUMB_IP
4. THUMB_TIP
5. INDEX_FINGER_MCP
6. INDEX_FINGER_PIP
7. INDEX_FINGER_DIP
8. INDEX_FINGER_TIP
9. MIDDLE_FINGER_MCP
10. MIDDLE_FINGER_PIP
11. MIDDLE_FINGER_DIP
12. MIDDLE_FINGER_TIP
13. RING_FINGER_MCP
14. RING_FINGER_PIP
15. RING_FINGER_DIP
16. RING_FINGER_TIP
17. PINKY_MCP
18. PINKY_PIP
19. PINKY_DIP
20. PINKY_TIP

手指位置

https://colab.research.google.com/drive/1q6FsLvn7SDEan8Ip-FD-54SFhIx6YrV1?usp=sharing

中指偵測 -> 打馬賽克

https://colab.research.google.com/drive/14jWo3RFfwUCU9kJLWQlriiwY9c7RkSOf?usp=sharing

Playing chess in the air

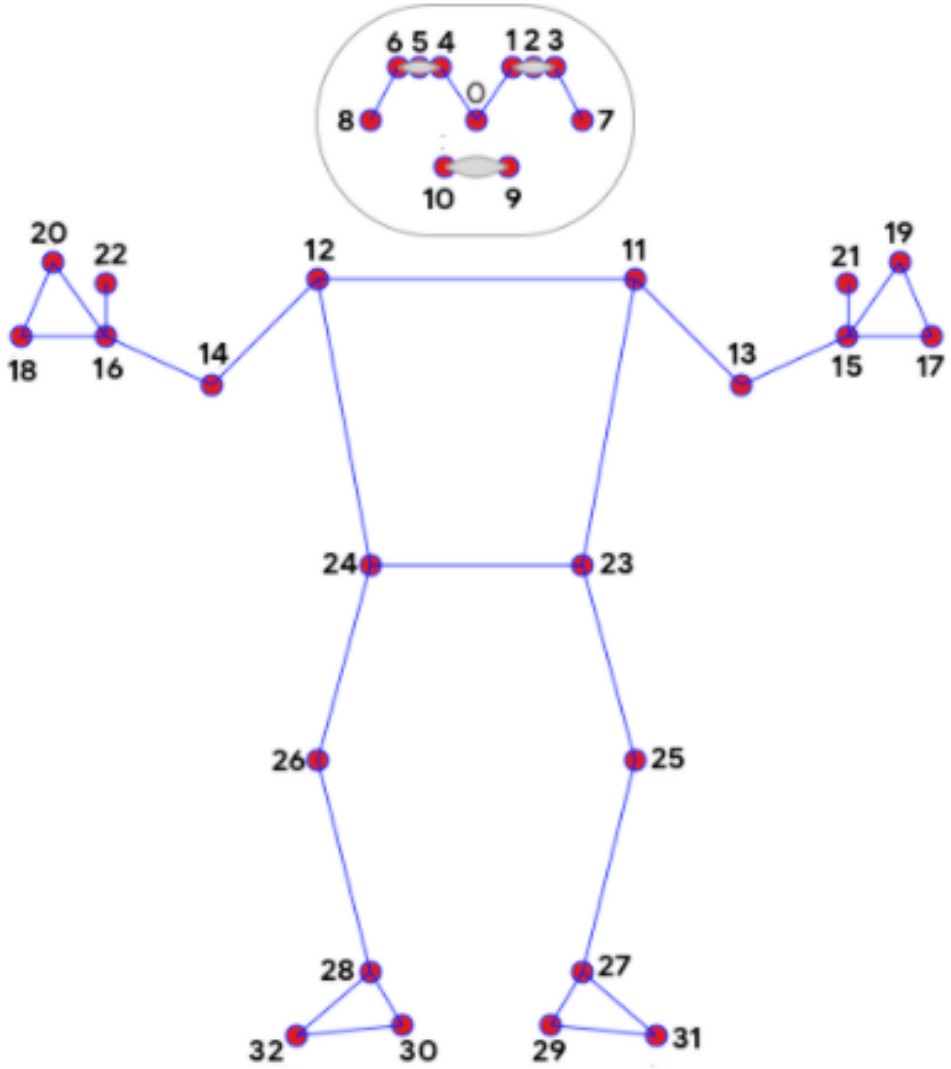
- https://www.codetd.com/en/article/13719093

(需再有鏡頭之NB/PC上執行, Colab上無法執行)

更多手勢辨識

- https://colab.research.google.com/drive/1JP9fwzoZjz1NUkmMs-e1dmFN-sK7yNR-?usp=sharing

Mediapipe 姿勢偵測（Pose）-33 點



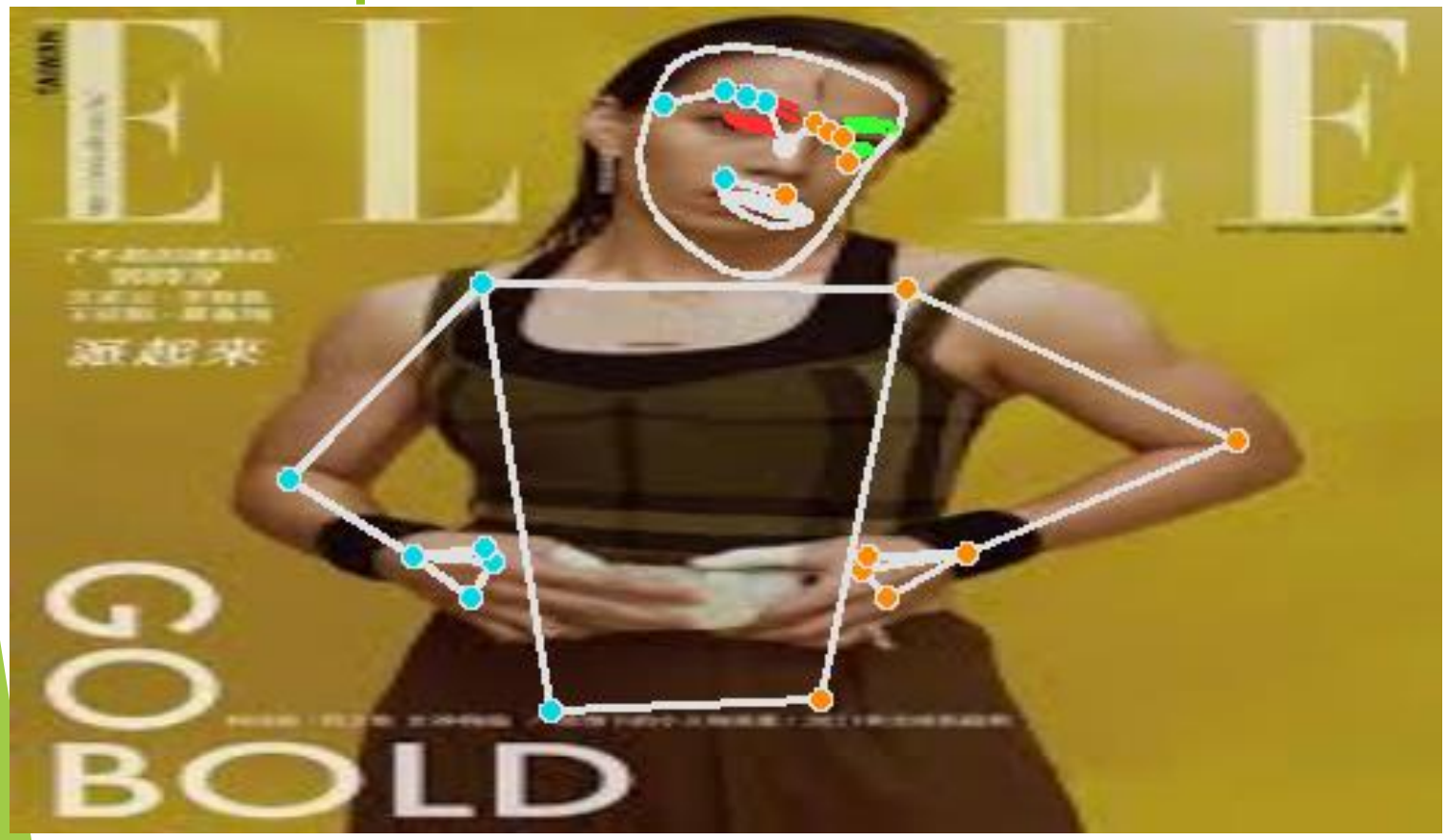
0. nose
1. left_eye_inner
2. left_eye
3. left_eye_outer
4. right_eye_inner
5. right_eye
6. right_eye_outer
7. left_ear
8. right_ear
9. mouth_left
10. mouth_right
11. left_shoulder
12. right_shoulder
13. left_elbow
14. right_elbow
15. left_wrist
16. right_wrist
17. left_pinky
18. right_pinky
19. left_index
20. right_index
21. left_thumb
22. right_thumb
23. left_hip
24. right_hip
25. left_knee
26. right_knee
27. left_ankle
28. right_ankle
29. left_heel
30. right_heel
31. left_foot_index
32. right_foot_index

https://colab.research.google.com/drive/1FGg7tQMZHrDPEuAZB9UdBubA53-7m4sF?usp=sharing

進行換背景

https://colab.research.google.com/drive/1a5rtMojLWWb85I9AL_rRmouVXDcCWMAZ?usp=sharing

Mediapipe 全身偵測（Holistic）-face+pose



https://colab.research.google.com/drive/1HdotF2-fFHSzsc3KCLHXbYDcpzDq7ugG?usp=sharing

物件偵測

https://colab.research.google.com/drive/1_UHKWJFNaWu5sstB53Ue9IejznHudOfy?usp=sharing