Python les-materialen

!pip install mediapipe

from google.colab import files  
import cv2  
from google.colab.patches import cv2\_imshow  
import numpy as np  
  
import mediapipe as mp  
mp\_objectron = mp.solutions.objectron  
mp\_drawing = mp.solutions.drawing\_utils

Mediapipe Objectron provides pre-trained models for shoe, chair, cup and camera.

#Objectron Shoe Model

Upload any image that that has a person with visible upper body to the Colab. We take two examples image from the web: https://unsplash.com/photos/8dukMg99Hd8 and https://unsplash.com/photos/PqbL\_mxmaUE

# Upload image files.  
uploaded = files.upload()  
  
# Read images with OpenCV.  
shoe\_images = {name: cv2.imread(name) for name in uploaded.keys()}  
  
# Preview the images.  
for name, image in shoe\_images.items():  
 print(name)   
 cv2\_imshow(image)

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aisfaris-jr-8dukMg99Hd8-unsplash.jpg

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andres-jasso-PqbL\_mxmaUE-unsplash.jpg

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with mp\_objectron.Objectron(  
 static\_image\_mode=True,  
 max\_num\_objects=5,  
 min\_detection\_confidence=0.5,  
 model\_name='Shoe') as objectron:  
 # Run inference on shoe images.  
 for name, image in shoe\_images.items():  
 # Convert the BGR image to RGB and process it with MediaPipe Objectron.  
 results = objectron.process(cv2.cvtColor(image, cv2.COLOR\_BGR2RGB))  
  
 # Draw box landmarks.  
 if not results.detected\_objects:  
 print(f'No box landmarks detected on {name}')  
 continue  
 print(f'Box landmarks of {name}:')  
 annotated\_image = image.copy()  
 for detected\_object in results.detected\_objects:  
 mp\_drawing.draw\_landmarks(  
 annotated\_image, detected\_object.landmarks\_2d, mp\_objectron.BOX\_CONNECTIONS)  
 mp\_drawing.draw\_axis(annotated\_image, detected\_object.rotation, detected\_object.translation)  
 cv2\_imshow(annotated\_image)

Box landmarks of aisfaris-jr-8dukMg99Hd8-unsplash.jpg:

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Box landmarks of andres-jasso-PqbL\_mxmaUE-unsplash.jpg:

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#Objectron Chair Model

Upload any image that that has chairs to the Colab. We take one example image from the web: https://unsplash.com/photos/7T8vSHYXq4U

# Upload image files.  
uploaded = files.upload()  
  
# Read images with OpenCV.  
chair\_images = {name: cv2.imread(name) for name in uploaded.keys()}  
  
# Preview the images.  
for name, image in chair\_images.items():  
 print(name)   
 cv2\_imshow(image)

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s-o-c-i-a-l-c-u-t-7T8vSHYXq4U-unsplash.jpg

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with mp\_objectron.Objectron(  
 static\_image\_mode=True,  
 max\_num\_objects=5,  
 min\_detection\_confidence=0.5,  
 model\_name='Chair') as objectron:  
 # Run inference on chair images.  
 for name, image in chair\_images.items():  
 # Convert the BGR image to RGB and process it with MediaPipe Objectron.  
 results = objectron.process(cv2.cvtColor(image, cv2.COLOR\_BGR2RGB))  
  
 # Draw box landmarks.  
 if not results.detected\_objects:  
 print(f'No box landmarks detected on {name}')  
 continue  
 print(f'Box landmarks of {name}:')  
 annotated\_image = image.copy()  
 for detected\_object in results.detected\_objects:  
 mp\_drawing.draw\_landmarks(  
 annotated\_image, detected\_object.landmarks\_2d, mp\_objectron.BOX\_CONNECTIONS)  
 mp\_drawing.draw\_axis(annotated\_image, detected\_object.rotation, detected\_object.translation)  
 cv2\_imshow(annotated\_image)

Box landmarks of s-o-c-i-a-l-c-u-t-7T8vSHYXq4U-unsplash.jpg:

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#Objectron Cup Model

Upload any image that that has cups to the Colab. We take one example image from the web: https://unsplash.com/photos/WJ7gZ3cilBA

# Upload image files.  
uploaded = files.upload()  
  
# Read images with OpenCV.  
cup\_images = {name: cv2.imread(name) for name in uploaded.keys()}  
  
# Preview the images.  
for name, image in cup\_images.items():  
 print(name)   
 cv2\_imshow(image)

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vlad-ursache-WJ7gZ3cilBA-unsplash.jpg

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with mp\_objectron.Objectron(  
 static\_image\_mode=True,  
 max\_num\_objects=5,  
 min\_detection\_confidence=0.5,  
 model\_name='Cup') as objectron:  
 # Run inference on cup images.  
 for name, image in cup\_images.items():  
 # Convert the BGR image to RGB and process it with MediaPipe Objectron.  
 results = objectron.process(cv2.cvtColor(image, cv2.COLOR\_BGR2RGB))  
  
 # Draw box landmarks.  
 if not results.detected\_objects:  
 print(f'No box landmarks detected on {name}')  
 continue  
 print(f'Box landmarks of {name}:')  
 annotated\_image = image.copy()  
 for detected\_object in results.detected\_objects:  
 mp\_drawing.draw\_landmarks(  
 annotated\_image, detected\_object.landmarks\_2d, mp\_objectron.BOX\_CONNECTIONS)  
 mp\_drawing.draw\_axis(annotated\_image, detected\_object.rotation, detected\_object.translation)  
 cv2\_imshow(annotated\_image)

Box landmarks of vlad-ursache-WJ7gZ3cilBA-unsplash.jpg:

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#Objectron Camera Model

Upload any image that that has cups to the Colab. We take one example image from the web: https://unsplash.com/photos/XzL8YAWdirE

# Upload image files.  
uploaded = files.upload()  
  
# Read images with OpenCV.  
camera\_images = {name: cv2.imread(name) for name in uploaded.keys()}  
  
# Preview the images.  
for name, image in camera\_images.items():  
 print(name)   
 cv2\_imshow(image)

Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

Saving hanson-lu-XzL8YAWdirE-unsplash.jpg to hanson-lu-XzL8YAWdirE-unsplash.jpg  
hanson-lu-XzL8YAWdirE-unsplash.jpg

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with mp\_objectron.Objectron(  
 static\_image\_mode=True,  
 max\_num\_objects=5,  
 min\_detection\_confidence=0.5,  
 model\_name='Camera') as objectron:  
 # Run inference on camera images.  
 for name, image in camera\_images.items():  
 # Convert the BGR image to RGB and process it with MediaPipe Objectron.  
 results = objectron.process(cv2.cvtColor(image, cv2.COLOR\_BGR2RGB))  
  
 # Draw box landmarks.  
 if not results.detected\_objects:  
 print(f'No box landmarks detected on {name}')  
 continue  
 print(f'Box landmarks of {name}:')  
 annotated\_image = image.copy()  
 for detected\_object in results.detected\_objects:  
 mp\_drawing.draw\_landmarks(  
 annotated\_image, detected\_object.landmarks\_2d, mp\_objectron.BOX\_CONNECTIONS)  
 mp\_drawing.draw\_axis(annotated\_image, detected\_object.rotation, detected\_object.translation)  
 cv2\_imshow(annotated\_image)

Box landmarks of hanson-lu-XzL8YAWdirE-unsplash.jpg:

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