

Object_Detection_Project

This project is an object detection application built using Streamlit, OpenCV, and MediaPipe.

Installation

To install the required dependencies, run:

```
pip install mediapipe opencv-python-headless streamlit
```

Usage

Open the Jupyter notebook Object_Detection_Application.ipynb. Run the cells to start the Streamlit application. Upload an image to detect objects.

Code Explanation

Image Upload and Processing The uploaded image is read and processed using OpenCV:

```
file_bytes = np.asarray(bytearray(uploaded_image.read()), dtype=np.uint8)
img = cv2.imdecode(file_bytes, 1)
img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
st.image(img, 'Uploaded Image', use_column_width=True)
```

Object Detection

The image is then passed to MediaPipe for object detection:

```
mp_image = mp.Image(image_format=mp.ImageFormat.SRGB, data=img)
detection_result = detector.detect(mp_image)
```

Visualization

The detection results are visualized on the image:

```
annotated_image = visualize(img, detection_result)
st.image(annotated_image, use_column_width=True)
```

Contributing

Feel free to open issues or submit pull requests if you have any improvements or bug fixes.

License

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