**Weapon Detection Using YOLOv3**

**Project Overview**

This project utilizes the YOLOv3 (You Only Look Once) algorithm for real-time weapon detection. The system is designed to detect various weapons such as knives, guns, and bombs using a pre-trained YOLOv3 model.

**Features**

* Real-time detection of weapons using either a webcam or a video file.
* Display of bounding boxes and labels for detected objects.
* Customizable detection thresholds.

**Technologies and Libraries Used**

* **Python (version 3.x)**
* **OpenCV**: Library for computer vision tasks.
* **NumPy**: Library for numerical computations.
* **YOLOv3**: Pre-trained deep learning model for object detection.

**Getting Started**

**Prerequisites**

Make sure you have the following installed:

* Python 3.x
* OpenCV
* NumPy

You can install the required libraries using pip:

pip install opencv-python numpy

**Setup**

1. Clone the repository and navigate to the project directory:
2. git clone <repository\_url>
3. cd <repository\_name>
4. Download YOLOv3 weights and configuration files:
   * Download the YOLOv3 weights and configuration files from the official YOLO website or any other reliable source.
   * Place these files in the project directory.

**Running the Code**

Depending on your use case, run the appropriate script:

* **Webcam-based weapon detection**:
* python weapon\_detection1.py
* **Video file-based weapon detection**:
* python weapon\_detection.py

**Sample Output**

The following image demonstrates the output of the YOLOv3 model, showing bounding boxes and labels for detected objects:

!Sample Output

**Customization**

You can customize the detection thresholds and other parameters within the script to suit your specific requirements. Detailed comments within the code will guide you through making these adjustments.

**Contact**

For further assistance or inquiries, please reach out via the repository’s contact information.