VirtualEye - Life Guard For Swimming Pools To Detect Active Drowning

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Prior Knowledge

One should have knowledge of the following Concepts:

- YOLO v3
- Flask

YOLO v3:

- Setting up and Installing Dependencies using ANACONDA.
- Downloading and Converting YOLOv3 weights into TensorFlow model files. ○ How to run detections in real-time on webcam and video.

Flask: ○ Flask is a web application framework written in Python ○ Flask is based on Werkzeug, WSGI toolkit and Jinja2 template engine. Both are Pocco projects.

Werkzeug:

It is a WSGI toolkit, which implements requests, response objects, and other utility functions. This enables building a web framework on top of it. The Flask framework uses Werkzeug as one of its bases.

WSGI:

Web Server Gateway Interface (WSGI) has been adopted as a standard for Python web application development. WSGI is a specification for a universal interface between the web server and the web applications.

Jinja2:

Jinja2 is a popular templating engine for Python. A web templating system combines a template with a certain data source to render dynamic web pages.

Install virtualenv for development environment:

virtualenv is a virtual Python environment builder. It helps a user to create multiple Pyt hon environments side-by-side.

1) Install virtualenv.

```
pip install virtualenv
```

2) Once install new virtural environment is created in new folder.

```
mkdir newproj
cd  newproj
virtualenv
venv
```

3) On windows, to active.

```
venv\scripts\activate
```

4) Now we can install flask.

```
pip install Flask
```