

Project development phase
Sprint - 3 Source Code

Date	11 November 2022
Team ID	PNT2022TMID13390
Project Name	Virtual-Lifeguard for Swimming Pools to Detect the Active Drowning

[net]

```
# Testing#  
batch=1  
# subdivisions=1#  
Training batch=64  
subdivisions=16  
width=608  
height=608  
channels=3  
momentum=0.9  
decay=0.0005  
angle=0 saturation =  
1.5  
exposure = 1.5  
hue=.1
```

```
learning_rate=0.01  
burn_in=1000  
max_batches = 500200  
policy=steps  
steps=400000,450000  
scales=.1,.1
```

```
[convolutional]  
batch_normalize=1  
filters=32 size=3  
stride=1  
pad=1  
activation=leaky
```

Downsample

```
[convolutional]  
batch_normalize=1  
filters=64 size=3  
stride=2  
pad=1  
activation=leaky
```

```
[convolutional]  
batch_normalize=1  
filters=32 size=1  
stride=1  
pad=1  
activation=leaky
```

```
[convolutional]  
batch_normalize=1  
filters=64 size=3  
stride=1  
pad=1  
activation=leaky
```

```
[shortcut]
from=-3
activation=linear#
```

Downsample

```
[convolutional]
batch_normalize=1
filters=128 size=3
stride=2
pad=1
activation=leaky
```

```
[convolutional]
batch_normalize=1
filters=64 size=1
stride=1
pad=1
activation=leaky
```

```
[convolutional]
batch_normalize=1
filters=128 size=3
stride=1
pad=1
activation=leaky
```

```
[shortcut]
from=-3
activation=linear
```

```
[convolutional]
batch_normalize=1
filters=64 size=1
stride=1
pad=1
activation=leaky
```

```
[convolutional]
batch_normalize=1
filters=128 size=3
stride=1
pad=1
activation=leaky
```

```
[shortcut]
from=-3
activation=linear
```

Downsample

```
[convolutional]
batch_normalize=1
```

filters=256
size=3
stride=2 pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3

stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]

batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear#

Downsample

[convolutional]
batch_normalize=1
filters=512 size=3
stride=2

pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1

pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]

batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear#

Downsample

[convolutional]
batch_normalize=1
filters=1024 size=3

stride=2
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=1024 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=512 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=1024 size=3
stride=1
pad=1
activation=leaky

[shortcut]
from=-3
activation=linear

[convolutional]
batch_normalize=1
filters=512 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
filters=1024 size=3
stride=1
pad=1

activation=leaky

[shortcut]

from=-3

activation=linear

[convolutional]

batch_normalize=1

filters=512 size=1

stride=1

pad=1

activation=leaky

[convolutional]

batch_normalize=1

filters=1024 size=3

stride=1

pad=1

activation=leaky

[shortcut]

from=-3

activation=linear

#####

[convolutional]

batch_normalize=1

filters=512 size=1

stride=1

pad=1

activation=leaky

[convolutional]

batch_normalize=1

size=3

stride=1 pad=1

filters=1024

activation=leaky

[convolutional]

batch_normalize=1

filters=512 size=1

stride=1

pad=1

activation=leaky

[convolutional]

batch_normalize=1

size=3

stride=1 pad=1

filters=1024

activation=leaky

[convolutional]
batch_normalize=1
filters=512 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=1024
activation=leaky

[convolutional]
size=1 stride=1
pad=1 filters=255
activation=linear

[yolo]
mask = 6,7,8
anchors = 10,13, 16,30, 33,23, 30,61, 62,45, 59,119, 116,90,
156,198, 373,326
classes=80
num=9
jitter=.3
ignore_thresh = .7
truth_thresh = 1
random=1

[route] layers =
-4

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[upsample]
stride=2

[route]
layers = -1, 61

[convolutional]

batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=512
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=512
activation=leaky

[convolutional]
batch_normalize=1
filters=256 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=512
activation=leaky

[convolutional]
size=1 stride=1
pad=1 filters=255
activation=linear

[yolo]
mask = 3,4,5

anchors = 10,13, 16,30, 33,23, 30,61, 62,45, 59,119, 116,90,
156,198, 373,326
classes=80
num=9
jitter=.3
ignore_thresh = .7
truth_thresh = 1
random=1

[route] layers =
-4

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[upsample]
stride=2

[route]
layers = -1, 36

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=256
activation=leaky

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1

pad=1 filters=256
activation=leaky

[convolutional]
batch_normalize=1
filters=128 size=1
stride=1
pad=1
activation=leaky

[convolutional]
batch_normalize=1
size=3
stride=1 pad=1
filters=256
activation=leaky

[convolutional]
size=1 stride=1
pad=1 filters=255
activation=linear

[yolo]
mask = 0,1,2
anchors = 10,13, 16,30, 33,23, 30,61, 62,45, 59,119, 116,90,
156,198, 373,326
classes=80
num=9
jitter=.3
ignore_thresh = .7
truth_thresh = 1
random=1