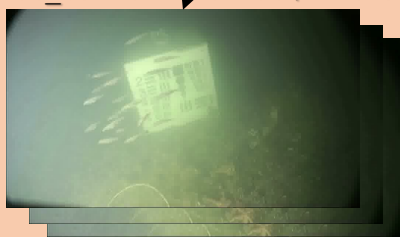


# Data

Original video (filmed in Limfjorden)

<https://www.kaggle.com/datasets/aalborguniversity/brackish-dataset>

```
os.system('ffmpeg -i  
/content/videos/{}.avi -vf scale=960:540 -  
sws_flags bicubic {}-%04d.jpg -  
hide_banner' .format(filename, filename))
```



Frames



Annotated Dataset

Total 1508 (val)+ 1508  
(test)+12067 (train)

```
fish - 0  
small_fish - 1  
crab - 2  
shrimp - 3  
jellyfish - 4  
starfish - 5
```

```
contents/  
├── annotations/  
│   ├── val/  
│   ├── train/  
│   ├── test/  
│   └── images/  
│       ├── train/  
│       ├── test/  
│       └── val/
```

# Train

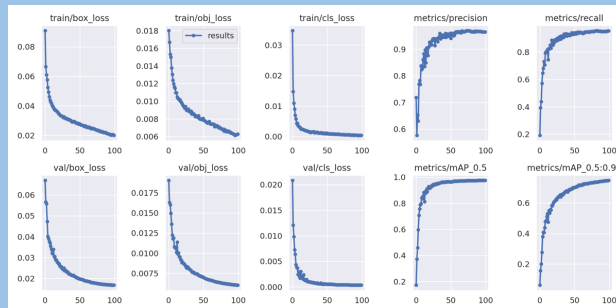
```
!echo "train: images/train" >> data.yaml  
!echo "val: images/val" >> data.yaml  
!echo "test: images/test" >> data.yaml
```

```
!python train.py  
--img 416 \  
--batch 16 \  
--epochs 100 \
```

```
100 epochs completed in 2.057 hours.  
Optimizer stripped from runs/train/exp/weights/last.pt, 14.3MB  
Optimizer stripped from runs/train/exp/weights/best.pt, 14.3MB  
  
Validating runs/train/exp/weights/best.pt...  
Fusing layers...  
Model summary: 157 layers, 7026307 parameters, 0 gradients, 15.8 GFLOPs  

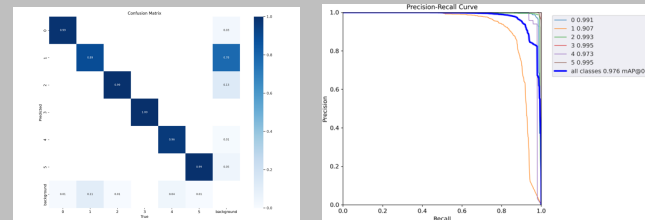

| Class | Images | Instances | P     | R     | mAP50 | mAP50-95: |
|-------|--------|-----------|-------|-------|-------|-----------|
| all   | 1506   | 3353      | 0.965 | 0.955 | 0.976 | 0.748     |
| 0     | 1506   | 318       | 0.957 | 0.984 | 0.991 | 0.818     |
| 1     | 1506   | 1124      | 0.905 | 0.843 | 0.907 | 0.563     |
| 2     | 1506   | 1097      | 0.981 | 0.99  | 0.993 | 0.809     |
| 3     | 1506   | 51        | 1     | 0.97  | 0.995 | 0.669     |
| 4     | 1506   | 48        | 0.958 | 0.954 | 0.973 | 0.696     |
| 5     | 1506   | 715       | 0.987 | 0.99  | 0.995 | 0.933     |

  
Results saved to runs/train/exp
```



# Infer

```
!python detect.py  
--weights best.pt  
--img 416  
--conf 0.4  
--source images/test
```



Cmatrix

PR Curve



Predictions