Theory
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Detection
oooooo

Tracking
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Results
o

Conclusions
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**UNIVERSITÀ
DEGLI STUDI
DI TRIESTE**

Detection, classification and tracking of fishes: an analysis of the YOLOv8 model

July 25, 2025

1 Theory

2 Detection

3 Tracking

4 Results

5 Conclusions

1 Theory

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Fish detection problem

Theory
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History of fish detection

Theory
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YOLO

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YOLOv8

Sub-things to explain

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Configuration files

```
1  train: path_to_train/images
2  val: path_to_val/images
3  test: path_to_test/images
4
5  nc: 23
6  names: [
7    'Caranx_sexfasciatus',
8    'F1',
9    'F2',
10   'F3',
11   'F4',
12   'F5',
13   'F6',
14   'F7',
15   'Acanthopagrus_palmaris',
16   'Lutjanus_russellii',
17   'acanthopagrus_and_caranx',
18   'acanthopagrus_palmaris',
19   'Gerres',
20   'Caranx',
21   'Amniataba_caudivittatus',
22   'gerres_2',
23   'gerres',
24   'Epinephelus',
25   'Fish',
26   'juvenile',
27   'palmaris',
28   'EJP',
29   'caudivittatus'
30  ]
```

```
1  train: path_to_train/images
2  val: path_to_val/images
3  test: path_to_test/images
4
5  nc: 1
6  names: ['Fish']
```

Theory
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YOLOv8 models

Theory
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Training

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Inference

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