EHB 420E-10342

Deep-Learning Based Fish Species Classification

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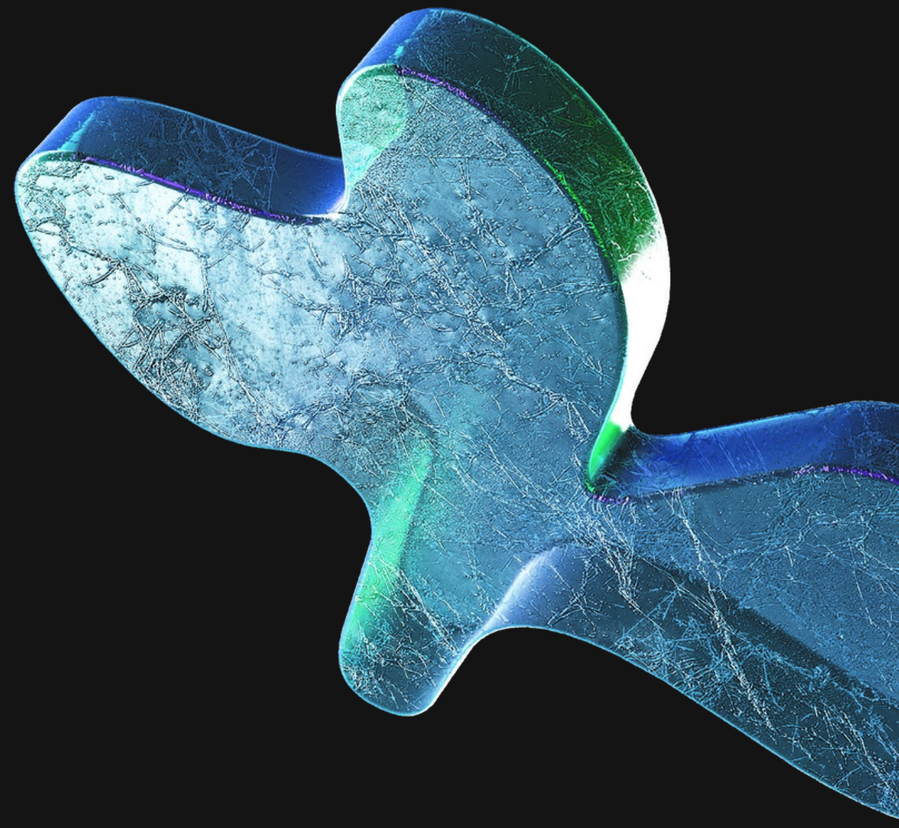


What The Problem Is

Classificiation of fish species for beginner fishers

Yedigöller / Bolu

The Approaches in The Literature That Already Attempt to Solve This Problem

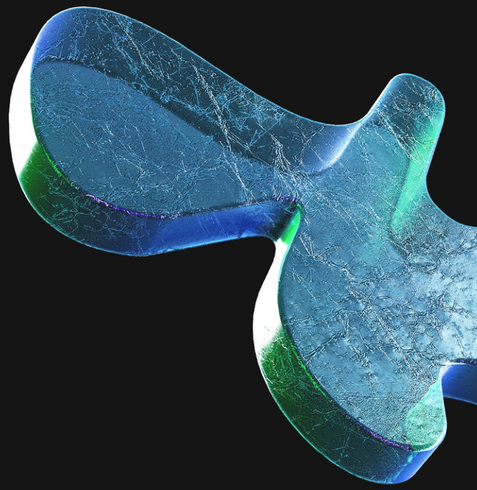
In 2020, a study was conducted by Izmir University of Economics [1], where pictures of various local fish species were taken, and several image processing algorithms were employed.

What Is My Aprroach

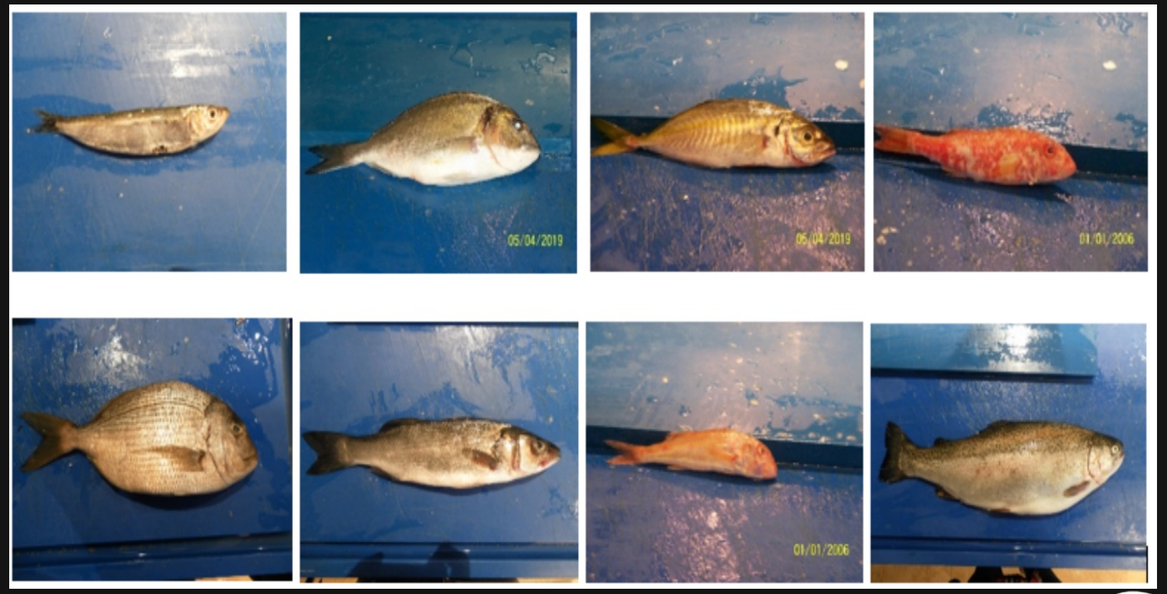
Creating dataset that includes local sea species. (İstavrit, Çupra, Alabalık …)

Training the model based on predicting the fish species.

Progress Of The Project



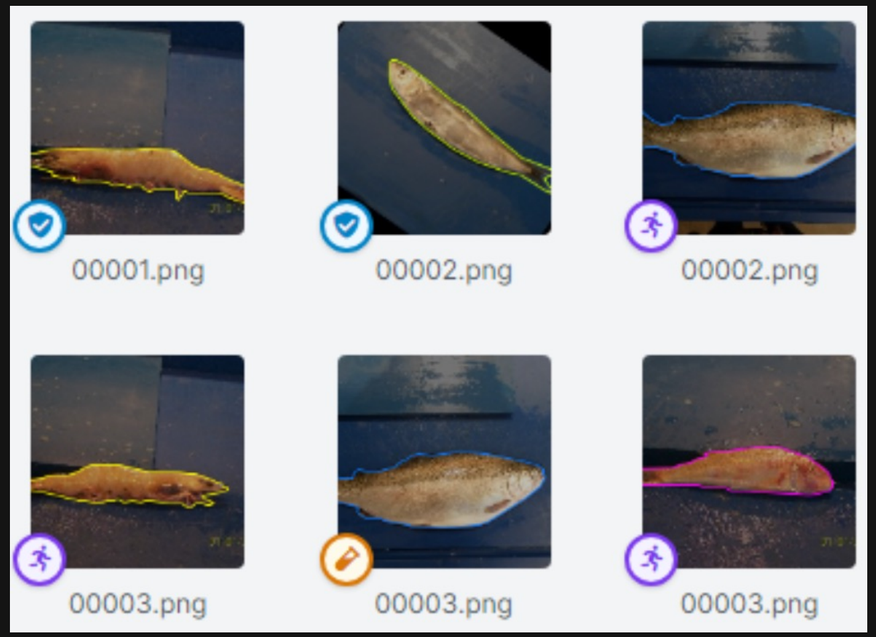
data Collection



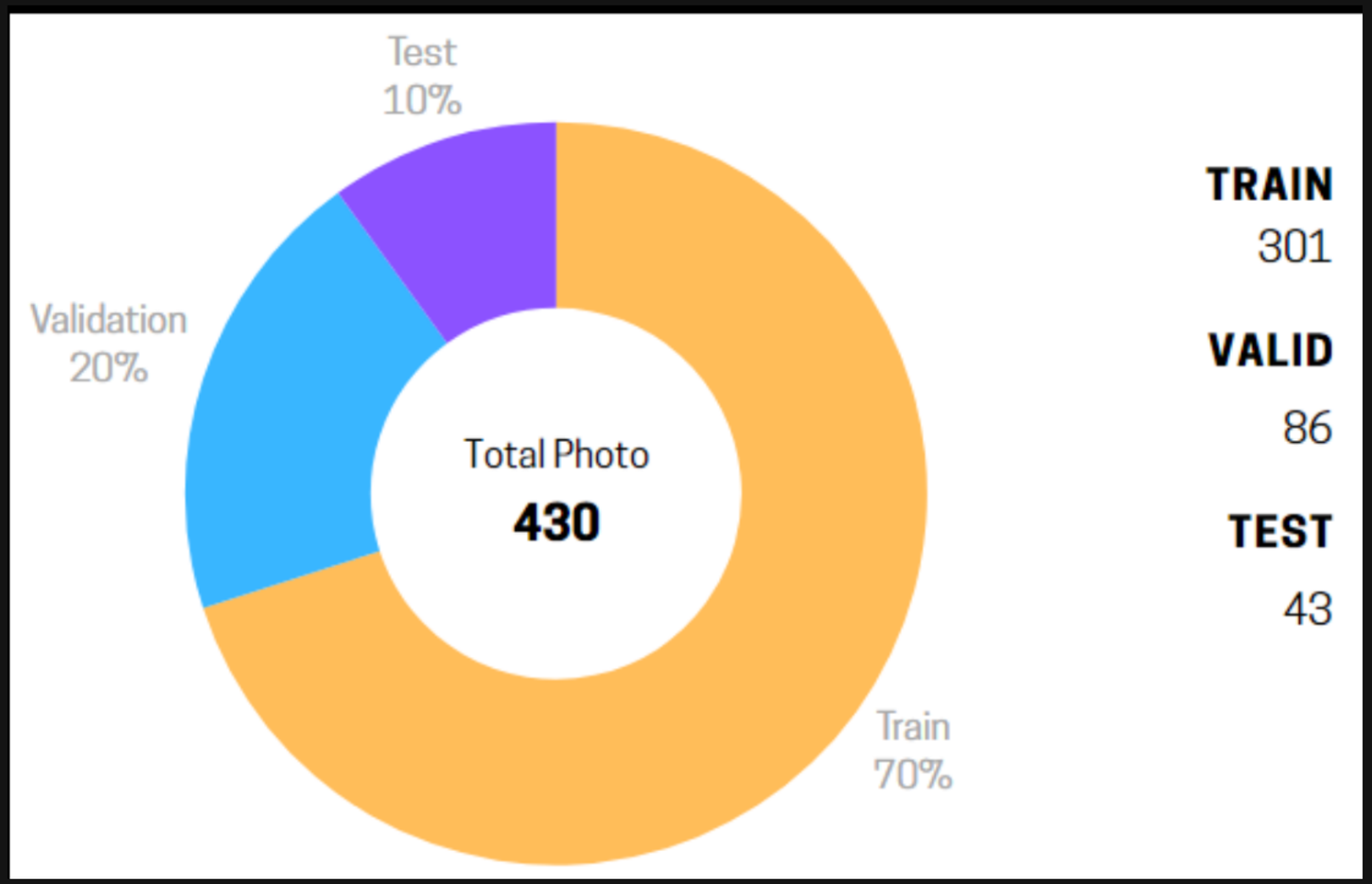
430 photos in total

9 species (tirsi, çupra, istavrit, kefal, mercan, levrek, karides, tekir, alabalık)

Labeling and classification



Dataset distribution



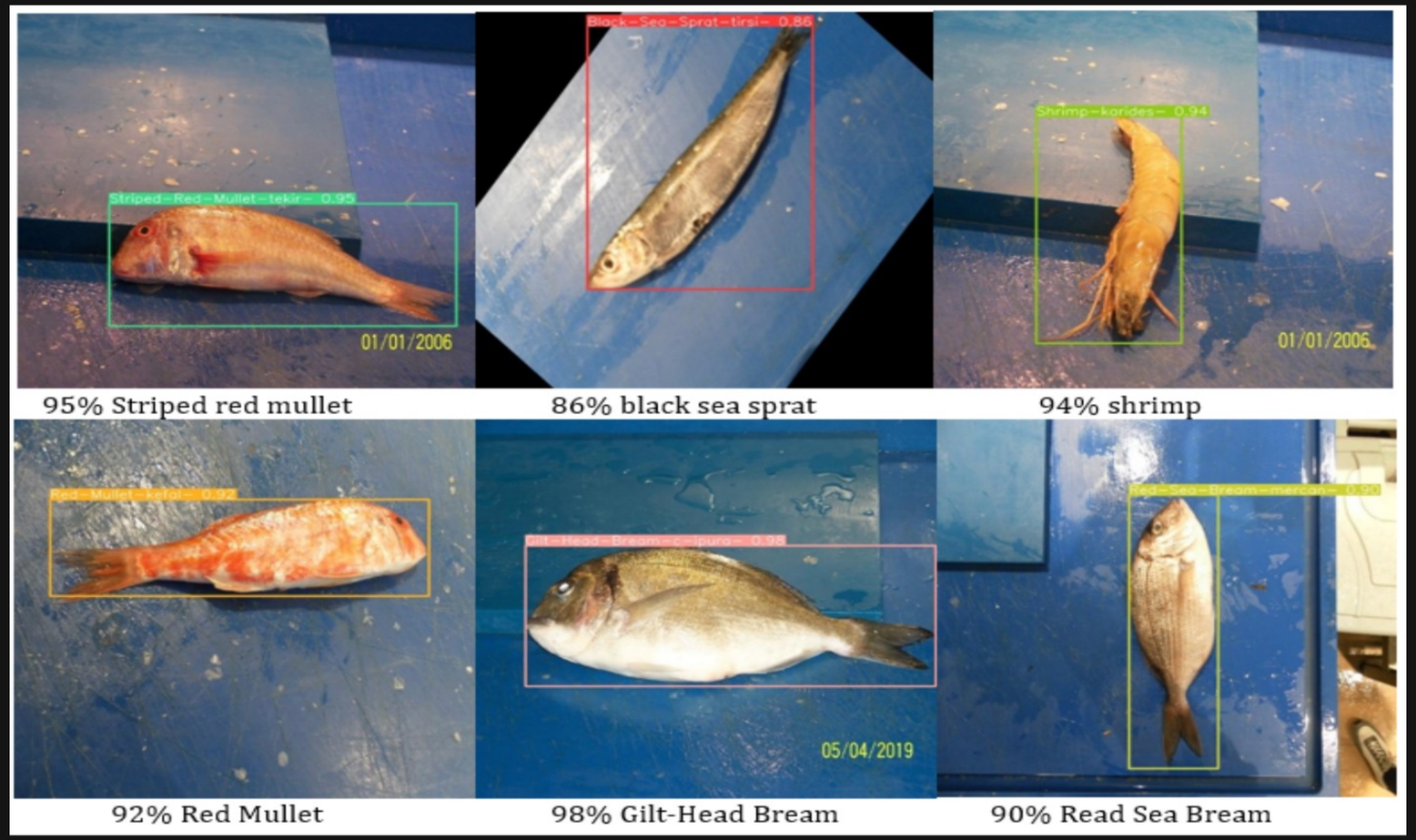
Results And Demo

20 epochs

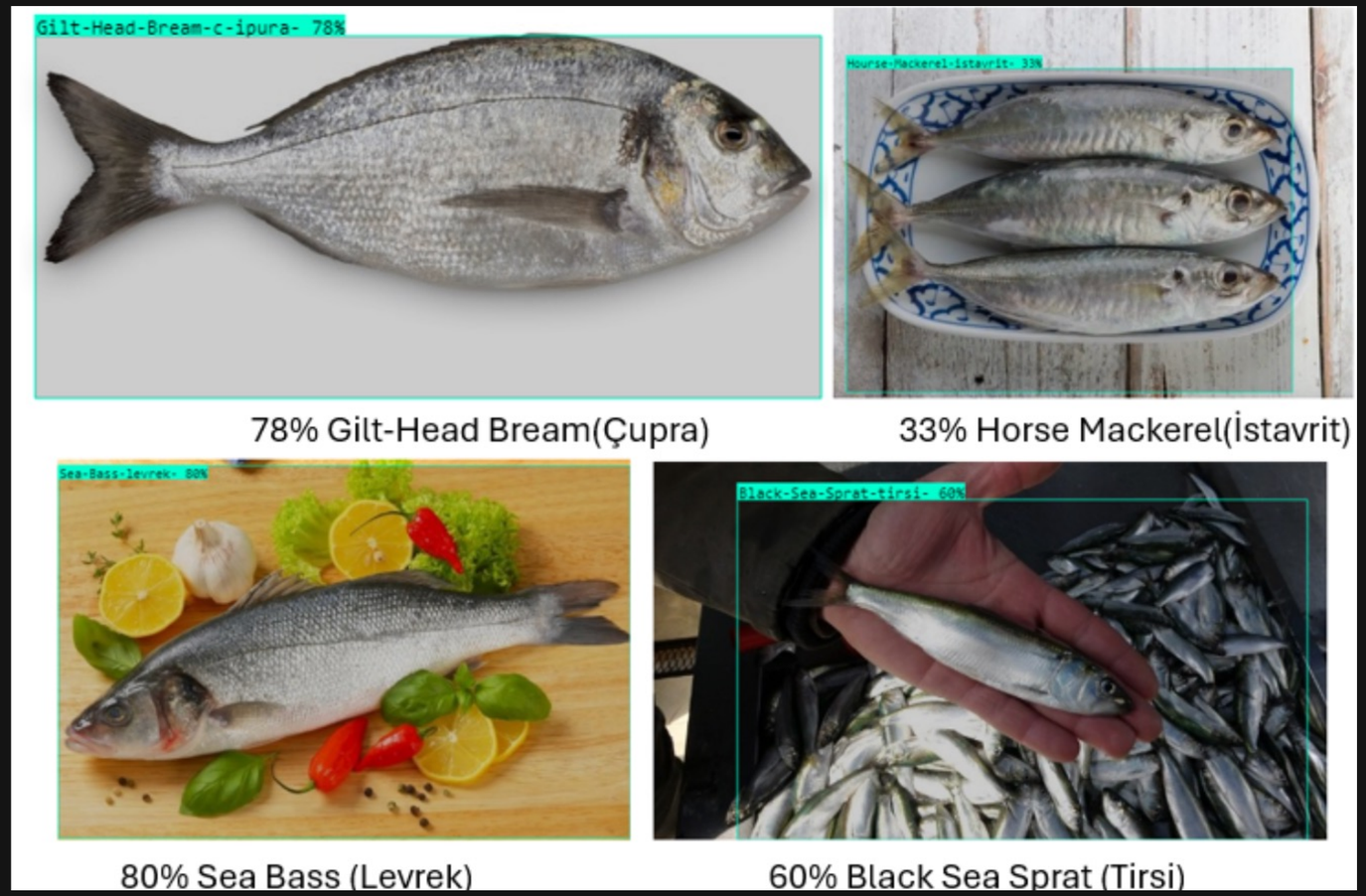
```
      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      20/20       2.3G     0.2857      1.149     0.8841         12        640: 100%|██████████| 19/19 [00:06<00:00,  2.82it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 3/3 [00:01<00:00,  1.95it/s]
                   all         86         84      0.962       0.98      0.975      0.913
```

0.97 mAP50 (average precision metric)

Results And Demo



Results And Demo



Conclusion And Future Work

Model is good at predicting fish species. But it cannot identify multiple fish in one photo.

Thank You for Listening