
CenterFace

Introduce

CenterFace(size of 7.3MB) is a practical anchor-free face detection and alignment method for edge devices.



Recent Update

- 2019.09.13 CenterFace is released.

Environment

- OpenCV 4.1.0
- Numpy
- Python3.6+

Accuracy

- Results on val set of WIDER FACE:

Model Version	Easy Set	Medium Set	Hard Set
FaceBoxes	0.840	0.766	0.395
FaceBoxes3.2×	0.798	0.802	0.715
RetinaFace-mnet	0.896	0.871	0.681
LFFD-v1	0.910	0.881	0.780
LFFD-v2	0.837	0.835	0.729
CenterFace	0.935	0.924	0.875
CenterFace-small	0.931	0.924	0.870

- Results on test set of WIDER FACE:

Model Version	Easy Set	Medium Set	Hard Set
FaceBoxes	0.839	0.763	0.396
FaceBoxes3.2×	0.791	0.794	0.715
RetinaFace-mnet	0.896	0.871	0.681
LFFD-v1	0.910	0.881	0.780
LFFD-v2	0.837	0.835	0.729
CenterFace	0.932	0.921	0.873

- RetinaFace-mnet** is short for RetinaFace-MobileNet-0.25 from excellent work insightface.
- LFFD-v1** is from prefect work LFFD.
- CenterFace/CenterFace-small evaluation is under MULTI-SCALE, FLIP.
- For SIO(Single Inference on the Original) evaluation schema, CenterFace also produces 92.2% (Easy), 91.1% (Medium) and 78.2% (Hard) for validation set.

- Results on FDDB:

Model Version	Disc ROC curves score
RetinaFace-mnet	96.0@1000
LFFD-v1	97.3@1000
LFFD-v2	97.2@1000
CenterFace	97.9@1000
CenterFace-small	98.1@1000

Inference Latency

- Latency on NVIDIA RTX 2080Ti:

Resolution->	640×480	1280×720(704)	1920×1080(1056)
RetinaFace-mnet	5.40ms	6.31ms	10.26ms
LFFD-v1	7.24ms	14.58ms	28.36ms
CenterFace	5.5ms	6.4ms	8.7ms
CenterFace-small	4.4ms	5.7ms	7.3ms

Results: Face as Point





Discussion

Welcome to join in **QQ Group(229042802)** for more discussion, including but not limited to face detection, face anti-spoofing and so on.

Author

- ywlife
- SyGoing
- MirrorYuChen

Citation

If you benefit from our work in your research and product, please consider to cite the following related papers:

```
1 @inproceedings{CenterFace,  
2   title={CenterFace: Joint Face Detection and Alignment Using Face as  
   Point},  
3   author={Xu, Yuanyuan and Yan, Wan and Sun, Haixin and Yang, Genke and  
   Luo, Jiliang},  
4   booktitle={arXiv:1911.03599},  
5   year={2019}  
6 }
```