

Object Detection
(including Instance Segmentation)

Compare Packages			
Feature / Aspect	DAMO-YOLO	Detectron2	MMDetection (mmdet)
License	Apache-2.0		
Primary Focus	Fast and lightweight YOLO-based detection	Modular, research-oriented detection and segmentation	Modular, extensible detection/ segmentation
Model Support	Only supports Damo-Yolo variant; currently lacks segmentation support	R-CNN families eg (Mask R-CNN, Faster R-CNN), RetinaNet	Over 50 models incl. YOLO, DETR, R-CNN
Ease of Use	Easy to deploy, but less customizable	Easy for research, modular APIs	Configuration-driven; more complex, but highly flexible
Training Flexibility	Moderate (focused on YOLO configurations)	High (custom training pipelines)	Very high (rich in configuration and registry systems)
Deployment Support	ONNX, TensorRT	TorchScript, ONNX, Caffe2	ONNX, TensorRT, ncnn, PPLNN, OpenVINO (depends on model)
Community & Ecosystem	Limited (less mainstream)	Large, research-focused community	Large, extensive OpenMMLab ecosystem
Documentation	Good, but not as extensive as others	Very well-documented	Extensive with tutorials and recipes
Installation Complexity	Easy	Easy	Complex (requires MMCV, MMEEngine, and CUDA compatability)
Compare Algorithms			
Model	DAMO-YOLO / RTMDet	(Faster / Cascade / Mask) R-CNN	DINO
Type	Single-stage (YOLO family)	Two-stage (R-CNN family)	Transformer based (DETR Family)
Year Since	2023	2018	2022
Architecture	CNN backbone with an FPN-like neck	CNN backbone + FPN + RPN	Fusion of CNN and Transformer with contrastive query denoising
Speed	Very Fast	Slow	Slow
Accuracy (mAP) of COCO	Good (56.74 mAP on COCO)	Fair (46.6 mAP on COCO)	Good (58.4 mAP on COCO)
Best For	Real-time detection, speed-critical applications	Research on R-CNN; small objects; instance segmentation via Mask R-CNN	Research of transformer, Flexible object detection on complex scenes, High accuracy requirement
Limitations	Less precise, especially for small objects; detection-only	Slow inference; less commonly used for detection recently	Requires large training datasets; detection-only
Corresponding Package	DAMO-YOLO in DAMO-YOLO, RTMDet in MMDetection	Detectron2, MMDetection	MMDetection
TL;DR			
If you want the fastest inference - Damo-YOLO			
If you prefer a transformer-based model - MMDetection			
If you prefer a CNN-based model - Detectron2 is simpler, MMDetection is more flexible			
if you want to try various models - MMDetection			