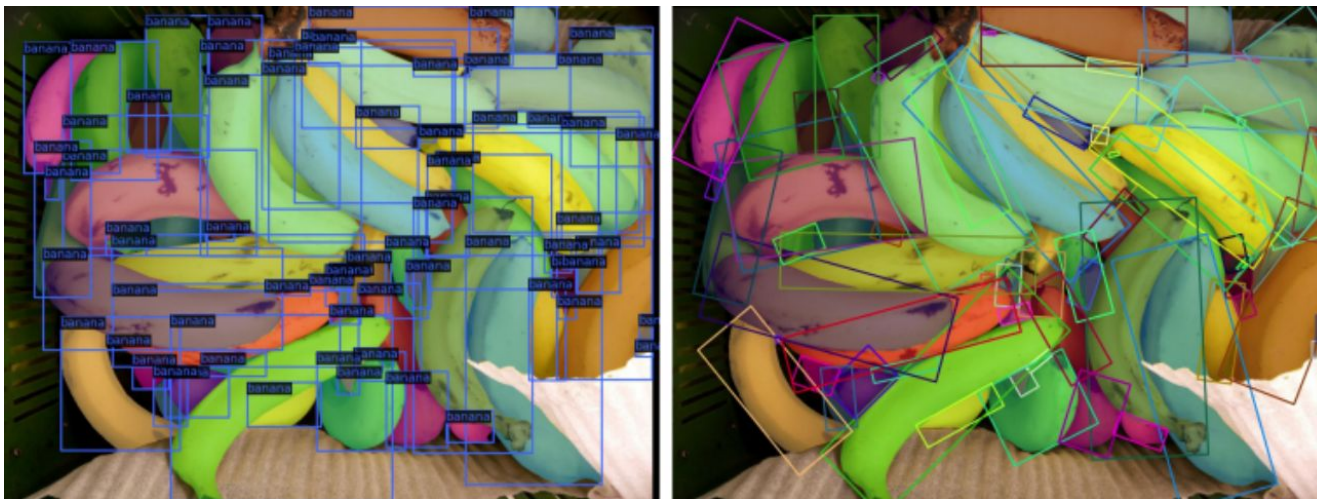# Knowledge Combination to Learn Rotated Detection Without Rotated Annotation

Alan Tianyu Zhu
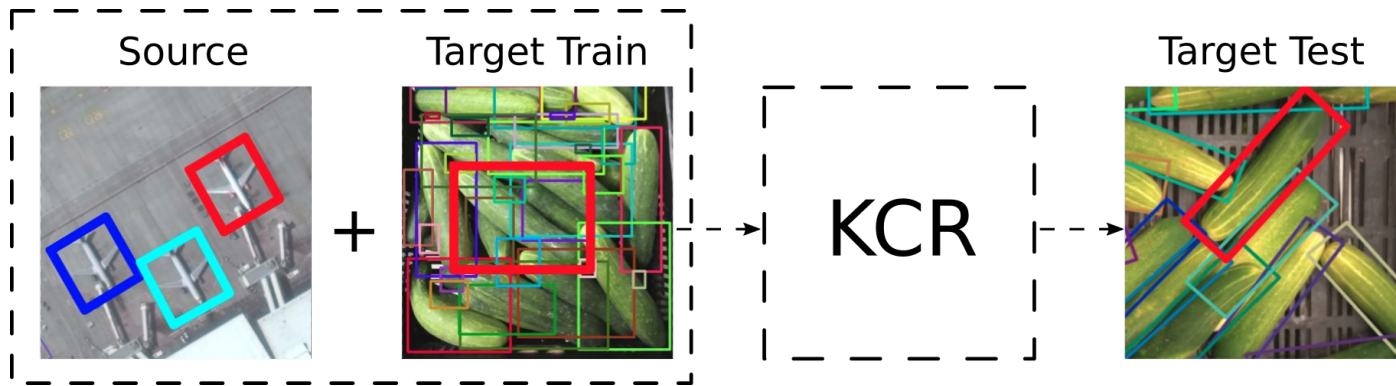
Rotated Detection Is Better but more expensive
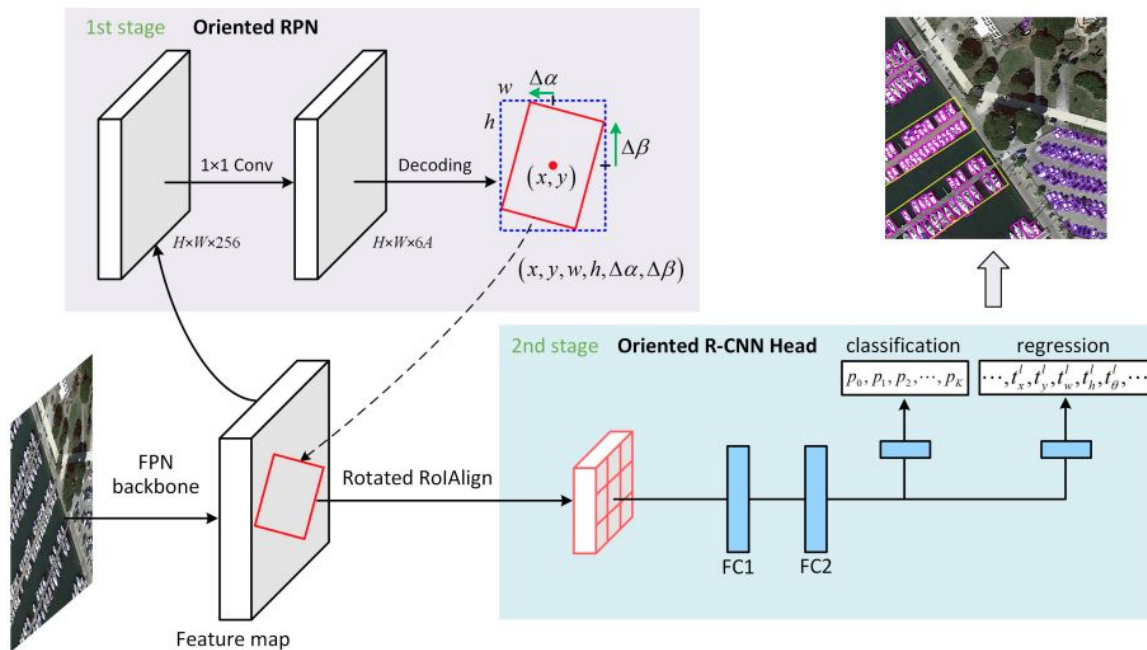
What's in Common?

KCR − skill knowledge + domain knowledge
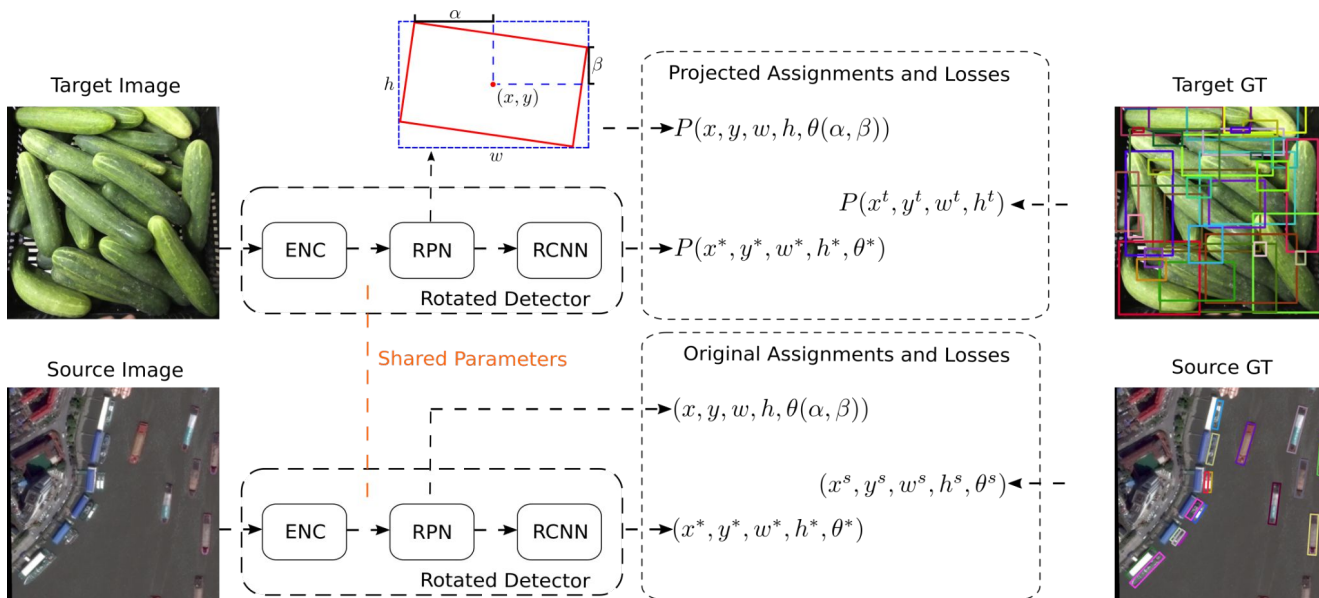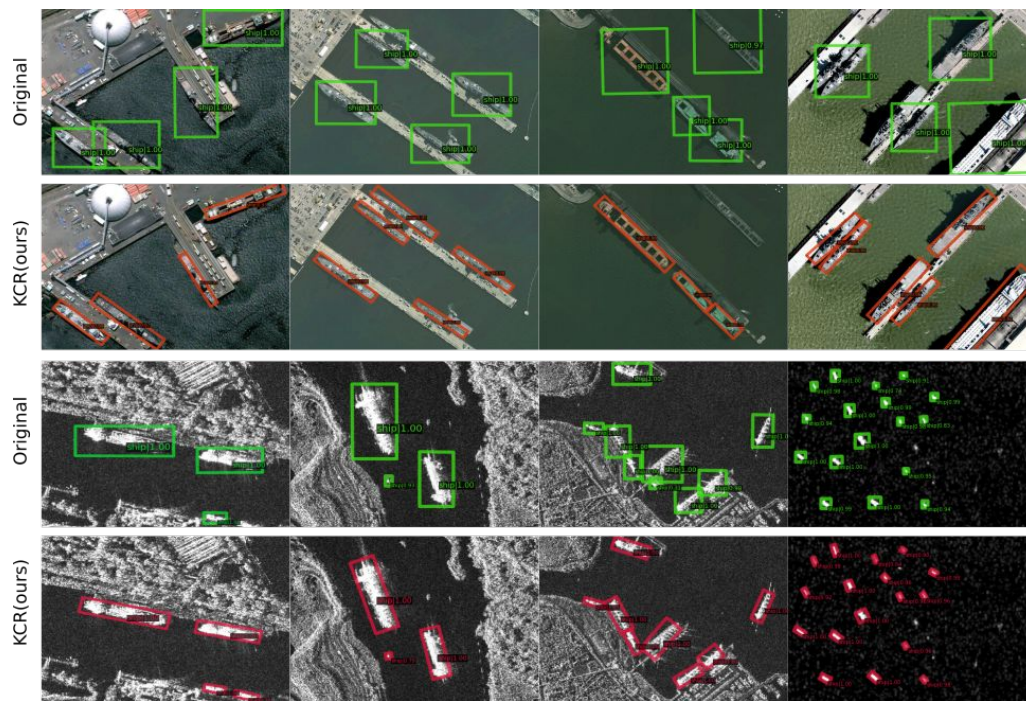
Two-Stage Rotated Detector (ORCNN)

Xingxing Xie, Gong Cheng, Jiabao Wang, Xiwen Yao, and Junwei Han. Oriented r-cnn for object detection. In Proceedings of the IEEE/CVF International Conference on Computer Vision.

KCR

Results

	Method	Source	Target Train	AP50↑
HRSC2016 [16]	original [33]	-	axis-aligned	0.175
	Grabcut [25]	-	axis-aligned	0.240
	Grabcut Train	-	axis-aligned	0.629
	KCR(ours)	COCO [13]	axis-aligned	0.579
	KCR(ours)	COCO Aug	axis-aligned	0.783
	KCR(ours)	DOTA [32]	axis-aligned	**0.791**
	KCR-HS(ours)	DOTA [32]	axis-aligned	**0.778**
	fully-supervised	-	rotated	0.903
SSDD [27]	original [33]	-	axis-aligned	0.432
	Grabcut Train	-	axis-aligned	0.585
	KCR(Ours)	COCO [13]	axis-aligned	**0.888**
	KCR(Ours)	COCO Aug	axis-aligned	0.874
	KCR(Ours)	DOTA [32]	axis-aligned	0.881
	KCR-HS(Ours)	DOTA [32]	axis-aligned	0.874
	fully-supervised	-	rotated	0.898

	Method	Source	Target Train	AP50↑
Cucumber	original [33]	-	axis-aligned	0.491
	KCR(ours)	DOTA [32]	axis-aligned	0.683
	KCR(ours)	banana	axis-aligned	**0.788**
	fully-supervised	-	rotated	0.820
Carrot	original [33]	-	axis-aligned	0.560
	KCR(ours)	DOTA [32]	axis-aligned	0.614
	KCR(ours)	banana	axis-aligned	**0.723**
	fully-supervised	-	rotated	0.765

Results

Results