	Some benchmark of MOT2015 (test)					
RANK	Algorithm	MOTA	IDsw	Average FPS	Detector	
1	KCF	38.9 ± 14.5	720 (13.9)	0.3	Public	
					Public	
15	DCCRF	33.6 ± 11.0	866 (19.4)	0.1	Public	
					Public	
26	MDP	30.3 ± 14.6	680	1.1	Public	
					Public	
41	DAC_min	26.1 ± 13.5	506	11.6	Public	
					Public	
60	LP2D	19.8 ± 14.2	1649	112.1	Public	
					Public	
65	RNN_LSTM	19.0 ± 15.2	1490	165.2	Public	
66	Ours	18.7 ± 16.3	1290	21.3	Private	
67	RMOT	18.6 ± 17.5	684	7.9	Public	
					Public	
71	GSCRR	15.8 ± 10.5	514	28.1	Public	
					Public	
75	DP_NMS	14.5 ± 14.5	4,537	444.8	Public	
76	LDCT	4.7 ± 41.3	12,348	20.7	Public	

MOT challenge Website:

https://motchallenge.net/results/2D_MOT_2015/?chl=2&orderBy=MOTA&orderStyle=ASC&det =Public

NOTE: the other models above use provided detection result and only ran tracker for the evaluation. Our model run both detection (YOLOv3 tiny) and tracker (modified Deep SORT).

ALL SUMMARY

FL	FULL TABLE (ALL) [Only choose the skip1 for comparison]					
Algorithm	MOTA	IDsw	Average FPS	Some metrics?		
Vanilla YOLOv3 Tiny + Deep SORT	33.6%	635	9.997820328723746			
YOLOv3 Tiny + Deep SORT (skip1)	30.7%	570	21.04679665688465			
YOLOv3 Tiny + Deep SORT (skip1 with probability-driven)	31.0%	594	20.462735731270826			
Vanilla Mobilenet SSD + Deep SORT	19.0%	577	9.8474409913098			
Mobilenet SSD + Deep SORT (skip1)	17.7%	520	15.964183221155363			
Mobilenet SSD + Deep SORT (skip1 with probability-driven)	18.0%	523	14.404656840037314			
Vanilla Squeezenet_1_0 + Deep SORT	9.9%	484	20.042197668270926			
Squeezenet 1.0 + Deep SORT (skip1)	9.3%	470	33.892409156740605			
Squeezenet 1.0 + Deep SORT (skip1 with probability-driven)	9.4%	475	32.83395018961477			
1						

YOLOv3 Tiny + Deep SORT

FULL TABLE (YOLOv3_tiny + Deep SORT)				
Algorithm	MOTA	IDsw	Average FPS	
Vanilla YOLOv3 Tiny	33.6%	635	9.997820328723746	
+ Deep SORT				
YOLOv3 Tiny +	32.9%	651	11.996064715800753	
Deep SORT with				
Down Sampling				
YOLOv3 Tiny +	30.7%	570	16.56956741670473	
Deep SORT with 1			(latest:21.04679665688465)	
Skip Frame	22.22/		20021010000112	
YOLOv3 Tiny +	30.0%	577	20.99549490626117	
Deep SORT with 1				
Skip Frame and				
Down Sampling	31.0%	594	17 757421621657469	
YOLOv3 Tiny + Deep SORT with 1	31.0%	394	17.757431631657468 (latest:20.46273573127082)	
Skip Frame and			(latest.20.462/33/312/082)	
Probability Driven				
YOLOv3 Tiny +	30.4%	601	19.84908451201911	
Deep SORT with 1	30.470	001	19.04900431201911	
Skip Frame and				
Probability Driven				
and Down Sampling				
YOLOv3 Tiny +	26.3%	581	20.68914912740483	
Deep SORT with 2				
Skip Frame				
YOLOv3 Tiny +	25.6%	538	25.16089209909558	
Deep SORT with 2				
Skip Frame and				
Down Sampling				
YOLOv3 Tiny +	28.2%	581	21.671446463250184	
Deep SORT with 2				
Skip Frame and				
Probability Driven	27.20/	504	22 4225 4222 442	
YOLOv3 Tiny +	27.2%	561	22.40254902085448	
Deep SORT with 2				
Skip Frame and Probability Driven				
and Down Sampling				
, ,				
YOLOv3 Tiny +	17.4%	858	30.685362182060103	
Deep SORT with 4	17.4/0	030	30.003302102000103	
Skip Frame				
YOLOv3 Tiny +	17.3%	826	32.71531749075337	
Deep SORT with 4	17.575	020	32.71331743073337	
Deep John With 4	1		L	

Skip Frame and			
Down Sampling			
YOLOv3 Tiny +	22.0%	778	26.27376224976722
Deep SORT with 4			
Skip Frame and			
Probability Driven			
YOLOv3 Tiny +	21.5%	721	28.642976056106697
Deep SORT with 4			
Skip Frame and			
Probability Driven			
and Down Sampling			
YOLOv3 Tiny +	11.5%	809	35.487960011851555
Deep SORT with 6			
Skip Frame			
YOLOv3 Tiny +	11.1%	821	36.79384991372523
Deep SORT with 6			
Skip Frame and			
Down Sampling			
YOLOv3 Tiny +	17.7%	758	28.440129230784574
Deep SORT with 6			
Skip Frame and			
Probability Driven			
YOLOv3 Tiny +	17.2%	760	30.637051555246025
Deep SORT with 6			
Skip Frame and			
Probability Driven			
and Down Sampling			

	Tradeoff of Down Sampling				
Algorithm	MOTA	IDsw	Average FPS		
Vanilla YOLOv3 Tiny + Deep SORT	33.6%	635	9.997820328723746		
YOLOv3 Tiny + Deep SORT with Down Sampling	32.9%	651	11.996064715800753		
YOLOv3 Tiny + Deep SORT with 1 Skip Frame	30.7%	570	16.56956741670473		
YOLOv3 Tiny + Deep SORT with 1 Skip Frame and Down Sampling	30.0%	577	20.99549490626117		
YOLOv3 Tiny + Deep SORT with 2 Skip Frame	26.3%	581	20.68914912740483		
YOLOv3 Tiny + Deep SORT with 2 Skip Frame and Down Sampling	25.6%	538	25.16089209909558		
YOLOv3 Tiny + Deep SORT with 4 Skip Frame	17.4%	858	30.685362182060103		
YOLOv3 Tiny + Deep SORT with 4 Skip Frame and Down Sampling	17.3%	826	32.71531749075337		
YOLOv3 Tiny + Deep SORT with 6 Skip Frame	11.5%	809	35.487960011851555		
YOLOv3 Tiny + Deep SORT with 6 Skip Frame and Down Sampling	11.1%	821	36.79384991372523		

Tradeoff of Skipping Frame					
Algorithm	MOTA	IDsw	Average FPS		
Vanilla YOLOv3 Tiny +	33.6%	635	9.997820328723746		
Deep SORT					
YOLOv3 Tiny + Deep	30.7%	570	16.56956741670473		
SORT with 1 Skip					
Frame					
YOLOv3 Tiny + Deep	26.3%	581	20.68914912740483		
SORT with 2 Skip					
Frame					
YOLOv3 Tiny + Deep	17.4%	858	30.685362182060103		
SORT with 4 Skip					
Frame					
YOLOv3 Tiny + Deep	11.5%	809	35.487960011851555		
SORT with 6 Skip					
Frame					

Tradeoff of Using probability Driven Detection				
MOTA	IDsw	Average FPS		
33.6%	635	9.997820328723746		
30.7%	570	18.56956741670473		
31.0%	594	17.757431631657468		
26.3%	581	22.68914912740483		
28.2%	581	21.671446463250184		
17.4%	858	30.685362182060103		
22.0%	778	26.27376224976722		
11.5%	809	35.487960011851555		
17.7%	758	28.440129230784574		
	MOTA 33.6% 30.7% 31.0% 26.3% 27.4% 22.0%	MOTA IDsw 33.6% 635 30.7% 570 31.0% 594 26.3% 581 28.2% 581 17.4% 858 22.0% 778 11.5% 809		

Mobilenet SSD + Deep SORT

FULL TABLE (Mobilenet SSD + Deep SORT)				
Algorithm	MOTA	IDsw	Average FPS	
Vanilla Mobilenet	19.0%	577	9.8474409913098	
SSD + Deep SORT				
Mobilenet SSD+	17.5%	647	10.164599991702229	
Deep SORT with				
Down Sampling				
•••				
Mobilenet SSD+	17.7%	520	15.964183221155363	
Deep SORT with 1				
Skip Frame	1.5.50/		15.22222246464	
Mobilenet SSD+	16.6%	569	16.252922740164827	
Deep SORT with 1				
Skip Frame and				
Down Sampling Mobilenet SSD+	10.00/	F22	14 404555040027214	
Deep SORT with 1	18.0%	523	14.404656840037314	
Skip Frame and				
Probability Driven				
Mobilenet SSD+	16.8%	573	14.878176973130104	
Deep SORT with 1	10.670	3/3	14.878170373130104	
Skip Frame and				
Probability Driven				
and Down Sampling				
Mobilenet SSD+	15.7%	494	20.658319625464184	
Deep SORT with 2				
Skip Frame				
Mobilenet SSD+	14.4%	530	20.67430430123686	
Deep SORT with 2				
Skip Frame and				
Down Sampling				
Mobilenet SSD+	16.5%	503	17.894475042242103	
Deep SORT with 2				
Skip Frame and				
Probability Driven				
Mobilenet SSD+	15.5%	553	18.656240404675874	
Deep SORT with 2				
Skip Frame and				
Probability Driven and Down Sampling				
 Mobilenet SSD+	10.7%	569	27.779953587538593	
Deep SORT with 4	10.770	202	21.119955561556593	
Skip Frame				
Mobilenet SSD+	9.5%	577	28.811689015745316	
Deep SORT with 4	3.370	3,7	20.011003013743310	
Deep John With 4				

Skip Frame and			
Down Sampling			
Mobilenet SSD+	13.2%	552	22.686678543601083
Deep SORT with 4			
Skip Frame and			
Probability Driven			
Mobilenet SSD+	12.0%	567	24.149181226030407
Deep SORT with 4			
Skip Frame and			
Probability Driven			
and Down Sampling			
Mobilenet SSD+	7.7%	586	32.62759230159879
Deep SORT with 6			
Skip Frame			
Mobilenet SSD+	6.0%	632	33.97791236616167
Deep SORT with 6			
Skip Frame and			
Down Sampling			
Mobilenet SSD+	10.7%	558	26.286393126809276
Deep SORT with 6			
Skip Frame and			
Probability Driven			
Mobilenet SSD+	9.9%	601	27.845049291724436
Deep SORT with 6			
Skip Frame and			
Probability Driven			
and Down Sampling			

	Tradeoff of Down Sampling					
Algorithm	MOTA	IDsw	Average FPS			
Vanilla Mobilenet	19.0%	577	9.8474409913098			
SSD + Deep SORT						
Mobilenet SSD+	17.5%	647	10.164599991702229			
Deep SORT with						
Down Sampling						
Mobilenet SSD+	17.7%	520	15.964183221155363			
Deep SORT with 1						
Skip Frame						
Mobilenet SSD+	16.6%	569	16.252922740164827			
Deep SORT with 1						
Skip Frame and						
Down Sampling						
Mobilenet SSD+	15.7%	494	20.658319625464184			
Deep SORT with 2						
Skip Frame						
Mobilenet SSD+	14.4%	530	20.67430430123686			
Deep SORT with 2						
Skip Frame and						
Down Sampling						
Mobilenet SSD+	10.7%	569	27.779953587538593			
Deep SORT with 4						
Skip Frame						
Mobilenet SSD+	9.5%	577	28.811689015745316			
Deep SORT with 4						
Skip Frame and						
Down Sampling						
Mobilenet SSD+	7.7%	586	32.62759230159879			
Deep SORT with 6						
Skip Frame						
Mobilenet SSD+	6.0%	632	33.97791236616167			
Deep SORT with 6						
Skip Frame and						
Down Sampling						

Tradeoff of Skipping Frame					
Algorithm	MOTA	IDsw	Average FPS		
Vanilla Mobilenet	19.0%	577	9.8474409913098		
SSD + Deep SORT					
Mobilenet SSD+	17.7%	520	15.964183221155363		
Deep SORT with 1					
Skip Frame					
Mobilenet SSD+	15.7%	494	20.658319625464184		
Deep SORT with 2					
Skip Frame					
Mobilenet SSD+	10.7%	569	27.779953587538593		
Deep SORT with 4					
Skip Frame					
Mobilenet SSD+	7.7%	586	32.62759230159879		
Deep SORT with 6					
Skip Frame					

	Tradeoff of Using probability Driven Detection					
Algorithm	MOTA	IDsw	Average FPS			
Vanilla Mobilenet	19.0%	577	9.8474409913098			
SSD + Deep SORT						
Mobilenet SSD+	17.7%	520	15.964183221155363			
Deep SORT with 1						
Skip Frame						
Mobilenet SSD+	18.0%	523	14.404656840037314			
Deep SORT with 1						
Skip Frame and						
Probability Driven						
Mobilenet SSD+	15.7%	494	20.658319625464184			
Deep SORT with 2						
Skip Frame						
Mobilenet SSD+	16.5%	503	17.894475042242103			
Deep SORT with 2						
Skip Frame and						
Probability Driven						
Mobilenet SSD+	10.7%	569	27.779953587538593			
Deep SORT with 4						
Skip Frame						
Mobilenet SSD+	13.2%	552	22.686678543601083			
Deep SORT with 4						
Skip Frame and						
Probability Driven						
Mobilenet SSD+	7.7%	586	32.62759230159879			
Deep SORT with 6						
Skip Frame						
Mobilenet SSD+	10.7%	558	26.286393126809276			
Deep SORT with 6						
Skip Frame and						
Probability Driven						

Squeezenetv1.0 + Deep SORT

FULL TABLE(Squeezenet_1_0 + Deep SORT)			
Algorithm	MOTA	IDsw	Average FPS
Vanilla	9.9%	484	20.042197668270926
Squeezenet_1_0 +			
Deep SORT			
Squeezenet_1_0+	9.4%	433	20.717160451288965
Deep SORT with			
Down Sampling			
Squeezenet 1 0+	9.3%	470	33.892409156740605
Deep SORT with 1			
Skip Frame			
Squeezenet_1_0+	8.9%	438	34.70319714140534
Deep SORT with 1			
Skip Frame and			
Down Sampling			
Squeezenet_1_0+	9.4%	475	32.83395018961477
Deep SORT with 1			
Skip Frame and			
Probability Driven			
Squeezenet 1 0+	9.0%	442	34.2523215195093
Deep SORT with 1			
Skip Frame and			
Probability Driven			
and Down Sampling			
Squeezenet_1_0+	8.4%	408	42.13578772760607
Deep SORT with 2			
Skip Frame			
Squeezenet_1_0+	8.2%	372	43.91007535351279
Deep SORT with 2	0.275	• • • • • • • • • • • • • • • • • • •	.0.0 2007 00000 2270
Skip Frame and			
Down Sampling			
Squeezenet_1_0+	8.6%	412	40.69885878710128
Deep SORT with 2	0.075		.0.0000007072020
Skip Frame and			
Probability Driven			
Squeezenet 1 0+	8.3%	368	43.13519724065963
Deep SORT with 2	3.370		.3.13313721003303
Skip Frame and			
Probability Driven			
and Down Sampling			
Squeezenet_1_0+	6.8%	328	53.7290647954817
Deep SORT with 4	3.575	320	33.7230077337017
Skip Frame			
2VIA LIGILIE	L		

Squeezenet 1 0+	6.6%	301	56.63252656732362
Deep SORT with 4			
Skip Frame and			
Down Sampling			
Squeezenet 1 0+	7.3%	343	49.940943534497414
Deep SORT with 4			
Skip Frame and			
Probability Driven			
Squeezenet_1_0+	6.9%	312	53.98874989205801
Deep SORT with 4			
Skip Frame and			
Probability Driven			
and Down Sampling			
•••			
Squeezenet_1_0+	5.6%	301	62.0070361055159
Deep SORT with 6			
Skip Frame			
Squeezenet_1_0+	5.4%	284	63.02879991725403
Deep SORT with 6			
Skip Frame and			
Down Sampling			
Squeezenet_1_0+	6.1%	313	58.15515176744455
Deep SORT with 6			
Skip Frame and			
Probability Driven			
Squeezenet_1_0+	6.0%	297	59.56392827961034
Deep SORT with 6			
Skip Frame and			
Probability Driven			
and Down Sampling			

Tradeoff of Down Sampling			
Algorithm	MOTA	IDsw	Average FPS
Vanilla Squeezenet_1_0 + Deep SORT	9.9%	484	20.042197668270926
Squeezenet_1_0+ Deep SORT with Down Sampling	9.4%	433	20.717160451288965
Squeezenet_1_0+ Deep SORT with 1 Skip Frame	9.3%	470	33.892409156740605
Squeezenet_1_0+ Deep SORT with 1 Skip Frame and Down Sampling	8.9%	438	34.70319714140534
Squeezenet_1_0+ Deep SORT with 2 Skip Frame	8.4%	408	42.13578772760607
Squeezenet_1_0+ Deep SORT with 2 Skip Frame and Down Sampling	8.2%	372	43.91007535351279
Squeezenet_1_0+ Deep SORT with 4 Skip Frame	6.8%	328	53.7290647954817
Squeezenet_1_0+ Deep SORT with 4 Skip Frame and Down Sampling	6.6%	301	56.63252656732362
Squeezenet_1_0+ Deep SORT with 6 Skip Frame	5.6%	301	62.0070361055159
Squeezenet_1_0+ Deep SORT with 6 Skip Frame and Down Sampling	5.4%	284	63.02879991725403
İ	1		

Tradeoff of Skipping Frame			
Algorithm	MOTA	IDsw	Average FPS
Vanilla	9.9%	484	20.042197668270926
Squeezenet_1_0 +			
Deep SORT			
Squeezenet_1_0+	9.3%	470	33.892409156740605
Deep SORT with 1			
Skip Frame			
Squeezenet_1_0+	8.4%	408	42.13578772760607
Deep SORT with 2			
Skip Frame			
Squeezenet_1_0+	6.8%	328	53.7290647954817
Deep SORT with 4			
Skip Frame			
Squeezenet_1_0+	5.6%	301	62.0070361055159
Deep SORT with 6			
Skip Frame			

Tradeoff of Using probability Driven Detection			
Algorithm	MOTA	IDsw	Average FPS
Vanilla	9.9%	484	20.042197668270926
Squeezenet_1_0 +			
Deep SORT			
Squeezenet_1_0+	9.3%	470	33.892409156740605
Deep SORT with 1			
Skip Frame			
Squeezenet_1_0+	9.4%	475	32.83395018961477
Deep SORT with 1			
Skip Frame and			
Probability Driven			
Squeezenet_1_0+	8.4%	408	42.13578772760607
Deep SORT with 2			
Skip Frame	0.60/	442	40.50005070740400
Squeezenet_1_0+	8.6%	412	40.69885878710128
Deep SORT with 2			
Skip Frame and Probability Driven			
Squeezenet 1 0+	6.8%	328	53.7290647954817
Deep SORT with 4	0.876	328	33.7290047934817
Skip Frame			
Squeezenet 1 0+	7.3%	343	49.940943534497414
Deep SORT with 4	7.370	3.3	13.3 103 1333 1137 111
Skip Frame and			
Probability Driven			
Squeezenet 1 0+	5.6%	301	62.0070361055159
Deep SORT with 6			
Skip Frame			
Squeezenet_1_0+	6.1%	313	58.15515176744455
Deep SORT with 6			
Skip Frame and			
Probability Driven			