

Train / Valid: Raw output from the segmentation network+C2:K44C3C2:KC2:K40

CRF Train / Valid: Output from the network with CRF post-processing

Mean IOU between training and validation splits

	Stem	Tomato	Tom. Border	Leaf	Bg. Tomato	Bg. Stem	Bg. Leaf	Background
Train	0.534	0.793	0.472	0.464	0.351	0.213	0.310	0.449
CRF Train	0.646	0.798	0.538	0.428	0.525	0.325	0.197	0.613
Valid	0.497	0.738	0.417	0.439	0.352	0.170	0.271	0.430
CRF Valid	0.586	0.746	0.454	0.370	0.517	0.255	0.143	0.590

Validation Set (No Post-processing)

		Actual Class									
		Stem	Tomato	Tom. Border	Leaf	Bg. Tomato	Bg. Stem	Bg. Leaf	Background	Precision	Recall
Predicted Class	Stem	255158	37	8002	1121	2089	26087	5384	6199	0.562	0.839
	Tomato	1125	245231	32024	618	12437	28	196	510	0.886	0.839
	Tom. Border	4562	14407	120096	1715	16610	232	802	1070	0.485	0.753
	Leaf	2859	2220	6730	589937	1582	2051	159983	14800	0.626	0.756
	Background Tomato	516	3887	2717	243	143101	1652	1895	4750	0.316	0.901
	Background Stem	9261	0	280	261	1660	74120	2735	5246	0.163	0.792
	Background Leaf	13033	1367	4381	133256	17634	21069	470165	55522	0.287	0.656
	Background	167781	9775	73289	214879	257615	329136	995866	1639006	0.949	0.444

Validation Set (CRF Post-processing)

		Actual Class									
		Stem	Tomato	Tom. Border	Leaf	Bg. Tomato	Bg. Stem	Bg. Leaf	Background	Precision	Recall
Predicted Class	Stem	226038	10	5771	3557	632	17941	1307	48821	0.743	0.743
	Tomato	599	243377	29221	3763	11797	4	3	3405	0.904	0.833
	Tom. Border	2749	14454	109878	5966	14619	47	217	11564	0.594	0.689
	Leaf	777	214	1537	537112	407	480	150237	89398	0.536	0.688
	Background Tomato	68	3763	2061	583	129198	710	260	22118	0.482	0.814
	Background Stem	5843	0	118	2690	586	42575	113	41638	0.287	0.455
	Background Leaf	3282	1174	2035	145581	6514	7688	174426	375727	0.240	0.243
	Background	64795	6250	34479	303041	104547	78735	401323	2694177	0.820	0.731

Training Set (No Post-processing)

		Actual Class									
		Stem	Tomato	Tom. Border	Leaf	Bg. Tomato	Bg. Stem	Bg. Leaf	Background	Precision	Recall
Predicted Class	Stem	2945120	432	55609	3002	11412	60709	14104	36480	0.553	0.942
	Tomato	2900	2353763	310242	1830	9783	353	558	1906	0.882	0.878
	Tom. Border	13425	181642	1259986	10630	13574	545	1142	3806	0.503	0.849
	Leaf	16101	6516	65997	6575380	12797	8386	997080	122254	0.542	0.843
	Background Tomato	4711	1408	6733	4277	1498139	7712	14383	33670	0.352	0.954
	Background Stem	53294	40	3389	519	13310	1075411	10672	42934	0.209	0.896
	Background Leaf	127769	3197	45629	2581831	187782	155000	7369729	831335	0.365	0.652
	Background	2160637	122499	759195	2959379	2508689	3833944	11810724	20359396	0.950	0.457

Training Set (CRF Post-processing)

		Actual Class									
		Stem	Tomato	Tom. Border	Leaf	Bg. Tomato	Bg. Stem	Bg. Leaf	Background	Precision	Recall
Predicted Class	Stem	2712415	333	45479	6641	4103	28415	6833	322649	0.712	0.867
	Tomato	1772	2345564	301577	6767	8651	95	605	16304	0.892	0.875
	Tom. Border	11129	180077	1194182	29394	11425	151	2238	56154	0.602	0.804
	Leaf	5793	1357	16889	5984266	4967	2214	954482	834543	0.500	0.767
	Background Tomato	1609	525	3793	8580	1350474	2151	9379	194522	0.548	0.860
	Background Stem	24917	24	1541	5432	4553	716842	13115	433145	0.400	0.598
	Background Leaf	44325	1608	18793	2552111	57506	44552	4055542	4527835	0.378	0.359
	Background	1006195	99878	401487	3363564	1022261	997199	5692826	31931052	0.833	0.717