## Appendix C. Detailed segmentation statistics.

The tables is this appendix show distribution statistics, by finger position, for the segmentation algorithms tested as compared to the hand marked ground truth for 3-inch slap images. The differences between the segmentation algorithm and ground truth are sorted into bins based on the tolerances allowed for correct segmentation. Specifically, the left/right edges must be within -32/+64 pixels of the ground truth, top edge -64/+64 and bottom edge -64/+128. For each finger position there is a column for each of the four segmentation box edges (L, R, T and B).

The first row ("No Finger Found") shows the counts for when a finger was not detected by the segmentation algorithm. The next four rows show statistics for segmentation edges that are within the specified minimum (MN) and maximum (MX) pixel tolerances compared to the ground truth, so these are considered good segmentations. Rows 1 (MN  $\leq$  d  $\leq$  0) and 3 (0  $\leq$  d  $\leq$  MX) show the average value for all differences in that range and rows 3 and 5 show the total count occurring in that range.

Rows 6-9 also show average difference values and bin counts but for ranges MN-32 <= d < MN and MX < d <= MX+32, which are just outside the accepted tolerance ranges. Rows 10-13 tally everything greater than 32 pixels away from the accepted tolerance range, d < MN-32 and d > MX+32.

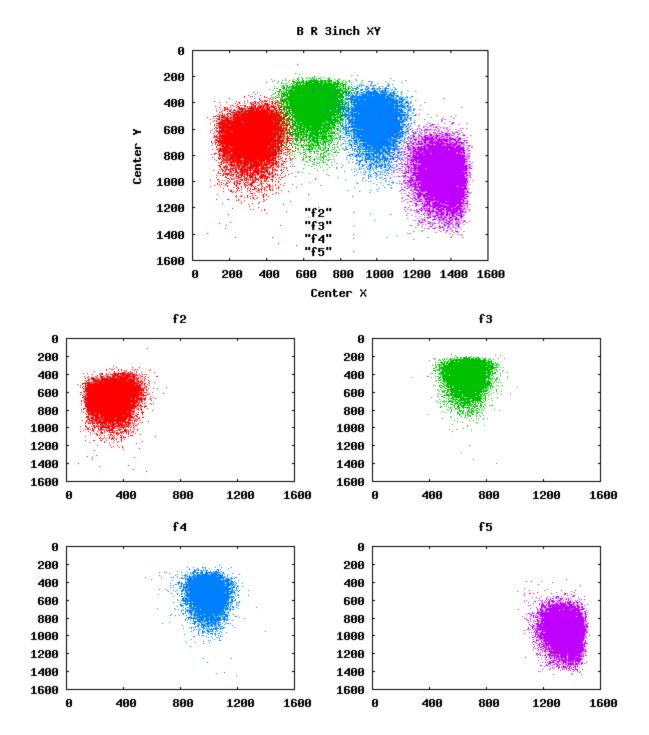
The last three rows show the total count for each bin, the overall average difference value and the standard deviation of all the difference values.

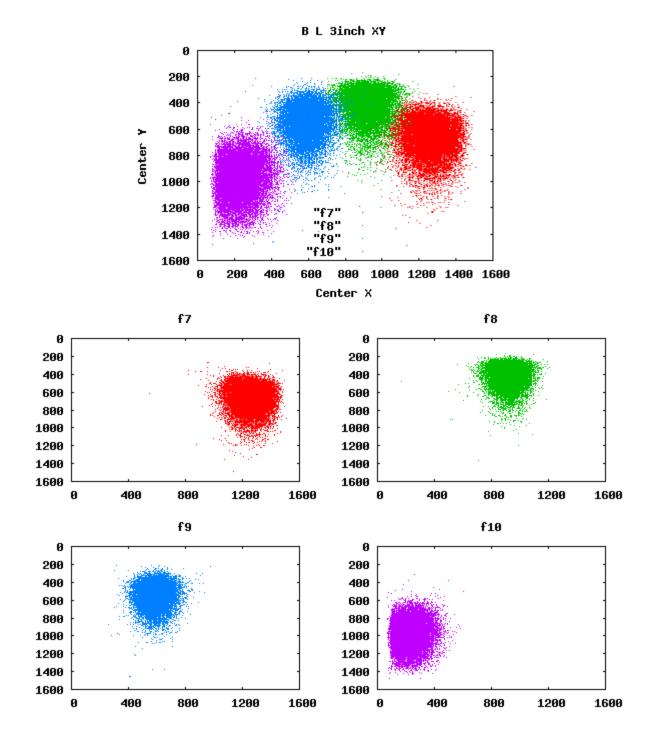
В

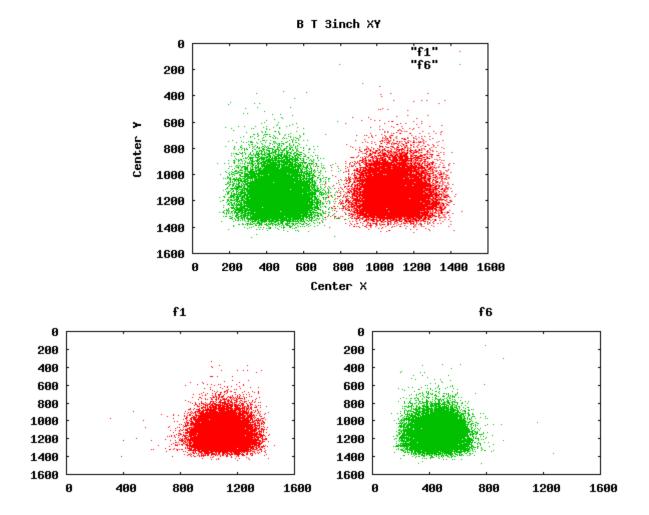
No Finger Found	R. Thumb 3					R. Index 3				R Middle 22				R. Ring 7				R. Little 35			
	L	R	T	В	L	R	T	В	L	R	T	В	L	R	T	В	L	R	T	В	
MN <= d < 0	-6.58	-7.54	-5.27	-17.34	-5.52	-6.42	-6.58	-12.57	-5.19	-6.36	-6.30	-18.40	-5.18	-7.80	-6.52	-19.45	-5.68	-7.27	-7.83	-15.24	
#	73	300	3983	5260	1448	1280	12371	1102	1375	1595	11723	1534	629	2732	11201	1827	1912	5426	11084	2614	
0 <= d <= MX	30.30	24.49	12.82	38.66	15.05	16.57	8.34	39.07	16.22	16.30	9.40	45.03	18.11	14.76	9.13	45.90	13.44	11.21	8.87	33.01	
#	24273	24042	20384	18769	23489	23609	12557	23739	23554	23280	13211	23198	24292	22146	13722	22785	22964	19398	13825	22159	
MN-32 <= d < MN	-55.00	-42.91	-81.36	-76.79	-40.14	-38.17	-80.83	-77.56	-34.00	-38.22	-91.00	-77.35	-37.00	-36.70	-85.83	-76.72	-42.50	-38.43	-74.00	-77.78	
#	3	11	11	205	7	6	6	16	1	9	3	67	1	46	6	145	8	90	8	72	
MX < d <= MX+32	70.09	77.09	76.25	139.80	#DIV/0!	71.27	78.50	138.84	75.25	71.02	80.50	137.46	76.50	80.20	88.50	139.60	76.04	69.50	66.67	139.61	
#	32	29	4	60	0	48	6	60	4	48	9	98	8	5	2	122	35	4	3	36	
d < MN-32	-382.40	-839.57	-504.04	-204.12	-255.37	-216.25	-680.78	-196.92	-334.00	-811.44	-504.14	-383.98	-430.57	-662.00	-465.71	-167.78	-236.50	-922.91	-389.00	-561.03	
#	26	15	34	81	19	2	18	24	15	18	7	41	14	20	17	51	6	44	2	66	
d > MX+32	468.43	661.46	893.92	601.22	137.20	374.24	297.60	710.61	515.95	396.33	298.73	311.17	446.13	368.47	192.80	367.53	836.47	154.83	625.93	219.62	
#	15	25	6	47	5	23	10	27	19	18	15	30	24	19	20	38	43	6	46	21	
Total #	24422	24422	24422	24422	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	
Average	30.06	24.25	9.34	26.15	13.66	15.79	0.56	37.45	15.22	14.61	2.07	40.78	17.70	11.94	1.91	40.92	13.40	5.41	2.54	26.38	
Std Dev	23.01	39.69	29.10	53.06	12.47	16.60	24.75	38.37	19.57	27.49	17.14	39.39	20.79	32.49	18.77	38.77	41.08	52.97	31.13	47.21	
			humb			L. In					iddle				Ring			L. U			
No Finger Found		:	26			C	)			,	9				14			1	.9		
	L	R	26 T	В	L	R	) T	В	L	R .	9 T	В	L	R	14 T	В	L	1 R	.9 T	В	
MN <= d < 0	-8.12	R -5.40	26 T -5.09	-16.44	-4.97	R -8.57	T -6.67	-12.66	-4.78	R -7.12	9 T -6.56	-18.11	-4.87	R -7.25	14 T -6.32	-19.02	-7.67	R -7.30	.9 T -8.24	-14.70	
MN <= d < 0 #	-8.12 171	R -5.40 129	26 T -5.09 5548	-16.44 5718	-4.97 1165	R -8.57 2424	T -6.67 12213	-12.66 1124	-4.78 1494	R -7.12 1831	7 -6.56 11640	-18.11 1685	-4.87 1908	R -7.25 1176	T -6.32 10772	-19.02 2458	-7.67 4396	7.30 2468	.9 T -8.24 10624	-14.70 3077	
MN <= d < 0 # 0 <= d <= MX	-8.12 171 27.60	R -5.40 129 26.08	26 T -5.09 5548 11.76	-16.44 5718 37.55	-4.97 1165 16.41	R -8.57 2424 15.28	T -6.67 12213 8.34	-12.66 1124 40.22	-4.78 1494 16.23	R -7.12 1831 16.83	T -6.56 11640 9.50	-18.11 1685 45.50	-4.87 1908 15.16	R -7.25 1176 18.39	T -6.32 10772 10.24	-19.02 2458 42.80	-7.67 4396 12.30	R -7.30 2468 14.34	9 T -8.24 10624 9.85	-14.70 3077 30.95	
MN <= d < 0 #	-8.12 171	R -5.40 129	26 T -5.09 5548	-16.44 5718	-4.97 1165	R -8.57 2424	T -6.67 12213	-12.66 1124	-4.78 1494	R -7.12 1831	7 -6.56 11640	-18.11 1685	-4.87 1908	R -7.25 1176	T -6.32 10772	-19.02 2458	-7.67 4396	7.30 2468	.9 T -8.24 10624	-14.70 3077	
MN <= d < 0 # 0 <= d <= MX #	-8.12 171 27.60 24121	-5.40 129 26.08 24226	26 T -5.09 5548 11.76 18818	-16.44 5718 37.55 18335	-4.97 1165 16.41 23721	R -8.57 2424 15.28 22439	T -6.67 12213 8.34 12708	-12.66 1124 40.22 23726	-4.78 1494 16.23 23410	R -7.12 1831 16.83 23069	7 -6.56 11640 9.50 13285	-18.11 1685 45.50 23048	-4.87 1908 15.16 23006	R -7.25 1176 18.39 23709	14 T -6.32 10772 10.24 14141	-19.02 2458 42.80 22203	-7.67 4396 12.30 20505	1 R -7.30 2468 14.34 22351	T -8.24 10624 9.85 14277	-14.70 3077 30.95 21719	
MN <= d < 0 # 0 <= d <= MX	-8.12 171 27.60 24121	R -5.40 129 26.08 24226	26 T -5.09 5548 11.76 18818	-16.44 5718 37.55 18335	-4.97 1165 16.41 23721	R -8.57 2424 15.28 22439 -37.15	T -6.67 12213 8.34 12708	-12.66 1124 40.22 23726	-4.78 1494 16.23 23410	R -7.12 1831 16.83 23069 -36.25	7 -6.56 11640 9.50 13285	-18.11 1685 45.50 23048	-4.87 1908 15.16 23006	R -7.25 1176 18.39 23709	T -6.32 10772 10.24 14141 -74.00	-19.02 2458 42.80 22203	-7.67 4396 12.30 20505	1 R -7.30 2468 14.34 22351	9 T -8.24 10624 9.85 14277	-14.70 3077 30.95 21719	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN	-8.12 171 27.60 24121 -48.67 12	R -5.40 129 26.08 24226 -46.13 8	26 T -5.09 5548 11.76 18818	-16.44 5718 37.55 18335 -77.79 147	-4.97 1165 16.41 23721 -49.50 2	R -8.57 2424 15.28 22439 -37.15 65	T -6.67 12213 8.34 12708 -79.94 8	-12.66 1124 40.22 23726 -77.09 35	-4.78 1494 16.23 23410	R -7.12 1831 16.83 23069 -36.25 16	T -6.56 11640 9.50 13285 -74.14 7	-18.11 1685 45.50 23048 -77.53 83	-4.87 1908 15.16 23006	R -7.25 1176 18.39 23709 -40.07 14	14 T -6.32 10772 10.24 14141 -74.00 3	-19.02 2458 42.80 22203 -76.67 158	-7.67 4396 12.30 20505 -40.50 15	7.30 2468 14.34 22351 -38.65 46	9 T -8.24 10624 9.85 14277 -85.20 5	-14.70 3077 30.95 21719 -73.98 41	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32	-8.12 171 27.60 24121 -48.67 12 73.71	R -5.40 129 26.08 24226 -46.13 8 74.75	26 T -5.09 5548 11.76 18818 -69.25 4 #DIV/0!	-16.44 5718 37.55 18335 -77.79 147 143.34	-4.97 1165 16.41 23721 -49.50 2 72.41	R -8.57 2424 15.28 22439 -37.15 65 66.00	T -6.67 12213 8.34 12708 -79.94 8 81.50	-12.66 1124 40.22 23726 -77.09 35 140.82	-4.78 1494 16.23 23410 -36.75 4 73.75	R -7.12 1831 16.83 23069 -36.25 16 70.30	T -6.56 11640 9.50 13285 -74.14 7 78.00	-18.11 1685 45.50 23048 -77.53 83 141.13	-4.87 1908 15.16 23006 -43.00 2 72.20	R -7.25 1176 18.39 23709 -40.07 14 69.56	14 T -6.32 10772 10.24 14141 -74.00 3 72.75	-19.02 2458 42.80 22203 -76.67 158 138.83	-7.67 4396 12.30 20505 -40.50 15 82.36	1 R -7.30 2468 14.34 22351 -38.65 46 74.37	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0!	-14.70 3077 30.95 21719 -73.98 41 140.43	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN	-8.12 171 27.60 24121 -48.67 12	R -5.40 129 26.08 24226 -46.13 8	26 T -5.09 5548 11.76 18818	-16.44 5718 37.55 18335 -77.79 147	-4.97 1165 16.41 23721 -49.50 2	R -8.57 2424 15.28 22439 -37.15 65	T -6.67 12213 8.34 12708 -79.94 8	-12.66 1124 40.22 23726 -77.09 35	-4.78 1494 16.23 23410	R -7.12 1831 16.83 23069 -36.25 16	T -6.56 11640 9.50 13285 -74.14 7	-18.11 1685 45.50 23048 -77.53 83	-4.87 1908 15.16 23006	R -7.25 1176 18.39 23709 -40.07 14	14 T -6.32 10772 10.24 14141 -74.00 3	-19.02 2458 42.80 22203 -76.67 158	-7.67 4396 12.30 20505 -40.50 15	7.30 2468 14.34 22351 -38.65 46	9 T -8.24 10624 9.85 14277 -85.20 5	-14.70 3077 30.95 21719 -73.98 41	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 #	-8.12 171 27.60 24121 -48.67 12 73.71	R -5.40 129 26.08 24226 -46.13 8 74.75 4	T -5.09 5548 11.76 18818 -69.25 4 #DIV/O! 0	-16.44 5718 37.55 18335 -77.79 147 143.34 65	-4.97 1165 16.41 23721 -49.50 2 72.41 44	R -8.57 2424 15.28 22439 -37.15 65 66.00 2	T -6.67 12213 8.34 12708 -79.94 8 81.50 2	-12.66 1124 40.22 23726 -77.09 35 140.82 28	-4.78 1494 16.23 23410 -36.75 4 73.75 16	R -7.12 1831 16.83 23069 -36.25 16 70.30 10	T -6.56 11640 9.50 13285 -74.14 7 78.00 5	-18.11 1685 45.50 23048 -77.53 83 141.13 63	-4.87 1908 15.16 23006 -43.00 2 72.20 5	R -7.25 1176 18.39 23709 -40.07 14 69.56 25	T -6.32 10772 10.24 14141 -74.00 3 72.75 4	-19.02 2458 42.80 22203 -76.67 158 138.83 48	-7.67 4396 12.30 20505 -40.50 15 82.36 11	R -7.30 2468 14.34 22351 -38.65 46 74.37 49	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/O! 0	-14.70 3077 30.95 21719 -73.98 41 140.43 35	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32	-8.12 171 27.60 24121 -48.67 12 73.71 77	R -5.40 129 26.08 24226 -46.13 8 74.75 4	26 T -5.09 5548 11.76 18818 -69.25 4 #DIV/0! 0	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10	-4.97 1165 16.41 23721 -49.50 2 72.41 44	R -8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20	-12.66 1124 40.22 23726 -77.09 35 140.82 28	-4.78 1494 16.23 23410 -36.75 4 73.75 16	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33	T -6.56 11640 9.50 13285 -74.14 7 78.00 5 -340.93	-18.11 1685 45.50 23048 -77.53 83 141.13 63	-4.87 1908 15.16 23006 -43.00 2 72.20 5	R -7.25 1176 18.39 23709 -40.07 14 69.56 25	14 T -6.32 10772 10.24 14141 -74.00 3 72.75 4	-19.02 2458 42.80 22203 -76.67 158 138.83 48	-7.67 4396 12.30 20505 -40.50 15 82.36 11	R -7.30 2468 14.34 22351 -38.65 46 74.37 49	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0	-14.70 3077 30.95 21719 -73.98 41 140.43 35	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 #	-8.12 171 27.60 24121 -48.67 12 73.71 77	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43	26 T -5.09 5548 11.76 18818 -69.25 4 #DIV/0! 0	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13	R -8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30	T -6.56 11640 9.50 13285 -74.14 7 78.00 5 -340.93 22	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29	T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0 -501.31 31	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39	
MN <= d < 0 # 0 <= d <= MX #  MN-32 <= d < MN #  MX < d <= MX+32 #  d < MN-32 #  d > MX+32	-8.12 171 27.60 24121 -48.67 12 73.71 77 -444.04 13 306.38	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43 650.79	26 T -5.09 5548 11.76 18818 -69.25 4 #DIV/0! 0 -391.29 26 842.35	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96 312.57	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13 312.05	R -8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20 1080.54	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15 238.33	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23 574.41	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30 924.81	7	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29 381.76	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13 386.37	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29 620.77	14 T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23 301.19	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64 484.80	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04 13 182.65	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30 341.58	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/O! 0 -501.31 31 684.04	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39 462.80	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 #	-8.12 171 27.60 24121 -48.67 12 73.71 77	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43	26 T -5.09 5548 11.76 18818 -69.25 4 #DIV/0! 0	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13	R -8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30	T -6.56 11640 9.50 13285 -74.14 7 78.00 5 -340.93 22	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29	T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0 -501.31 31	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32 #	-8.12 171 27.60 24121 -48.67 12 73.71 77 -444.04 13 306.38 28	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43 650.79 12	T T -5.09	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96 312.57 61	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13 312.05	-8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20 1080.54	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15 238.33 18	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23 574.41 28	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7 428.82 33	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30 924.81 8	T T -6.56 11640 9.50 13285 -74.14 7 78.00 5 -340.93 22 204.60 5	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29 381.76 56	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13 386.37 30	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29 620.77 11	14 T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23 301.19 21	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64 484.80 33	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04 13 182.65 24	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30 341.58 20	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0 -501.31 31 684.04 27	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39 462.80 53	
MN <= d < 0 # 0 <= d <= MX #  MN-32 <= d < MN #  MX < d <= MX+32 #  d < MN-32 #  d > MX+32 #  Total #	-8.12 171 27.60 24121 -48.67 12 73.71 77 -444.04 13 306.38 28	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43 650.79 12 24422	T T -5.09	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96 312.57 61 24422	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13 312.05 19	R -8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20 1080.54 14 24964	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15 238.33 18 24964	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23 574.41 28	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7 428.82 33	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30 924.81 8	7	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29 381.76 56	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13 386.37 30	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29 620.77 11 24964	14 T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23 301.19 21	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64 484.80 33	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04 13 182.65 24	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30 341.58 20 24964	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0 -501.31 31 684.04 27	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39 462.80 53	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32 #	-8.12 171 27.60 24121 -48.67 12 73.71 77 -444.04 13 306.38 28	R -5.40 129 26.08 24226 -46.13 8 74.75 4 -410.14 43 650.79 12	T T -5.09	-16.44 5718 37.55 18335 -77.79 147 143.34 65 -410.10 96 312.57 61	-4.97 1165 16.41 23721 -49.50 2 72.41 44 -890.50 13 312.05	-8.57 2424 15.28 22439 -37.15 65 66.00 2 -270.05 20 1080.54	T -6.67 12213 8.34 12708 -79.94 8 81.50 2 -550.20 15 238.33 18	-12.66 1124 40.22 23726 -77.09 35 140.82 28 -196.09 23 574.41 28	-4.78 1494 16.23 23410 -36.75 4 73.75 16 -665.50 7 428.82 33	R -7.12 1831 16.83 23069 -36.25 16 70.30 10 -507.33 30 924.81 8	T T -6.56 11640 9.50 13285 -74.14 7 78.00 5 -340.93 22 204.60 5	-18.11 1685 45.50 23048 -77.53 83 141.13 63 -249.59 29 381.76 56	-4.87 1908 15.16 23006 -43.00 2 72.20 5 -416.58 13 386.37 30	R -7.25 1176 18.39 23709 -40.07 14 69.56 25 -586.86 29 620.77 11	14 T -6.32 10772 10.24 14141 -74.00 3 72.75 4 -536.54 23 301.19 21	-19.02 2458 42.80 22203 -76.67 158 138.83 48 -264.03 64 484.80 33	-7.67 4396 12.30 20505 -40.50 15 82.36 11 -247.04 13 182.65 24	R -7.30 2468 14.34 22351 -38.65 46 74.37 49 -268.45 30 341.58 20	9 T -8.24 10624 9.85 14277 -85.20 5 #DIV/0! 0 -501.31 31 684.04 27	-14.70 3077 30.95 21719 -73.98 41 140.43 35 -625.92 39 462.80 53	

# Appendix D. Plots of 3-inch segmentation box centers.

The plots in this appendix show the distribution of the segmentation box centers (x,y) for the 3-inch data. There is a combined plot for each slap image and then a smaller plot for each finger position. The individual finger plots are better for seeing the full "spread" of x,y positions detected. The plot for the ground truth (GT) is included as a baseline for comparison. The blank lines that appear in some of the plots are most likely caused by the segmentation algorithm doing some level of sampling of the input image. The reason the lines are not evenly distributed in some plots is an artifact of the sampling when scaling the images for displaying in the report.

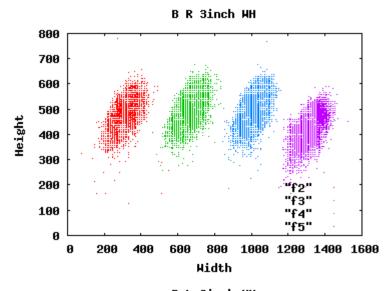


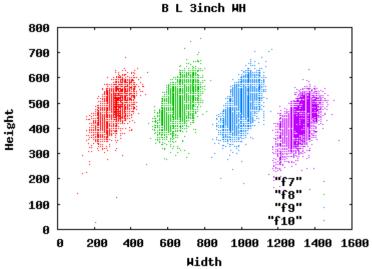


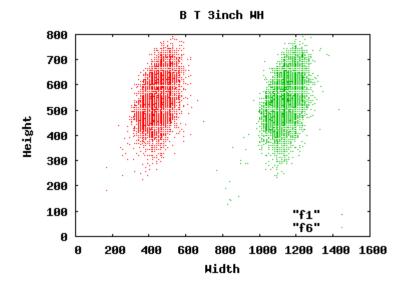


# Appendix E. Plots of 3-inch segmentation box widths and heights.

The plots in this appendix show the distribution of the segmentation box widths and heights for the 3-inch data. There is a combined plot for each slap image and then a smaller plot for each finger position. The individual finger plots are better for seeing the full "spread" of widths and heights detected. The widths are "spread out" on the plot by adding 350, 750 and 1050 to the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> widths plotted. The plot for the ground truth (GT) is included as a baseline for comparison. The blank lines that appear in some of the plots are most likely caused by the segmentation algorithm doing some level of sampling of the input image. The reason the lines are not evenly distributed in some plots is an artifact of the sampling when scaling the images for displaying in the report.

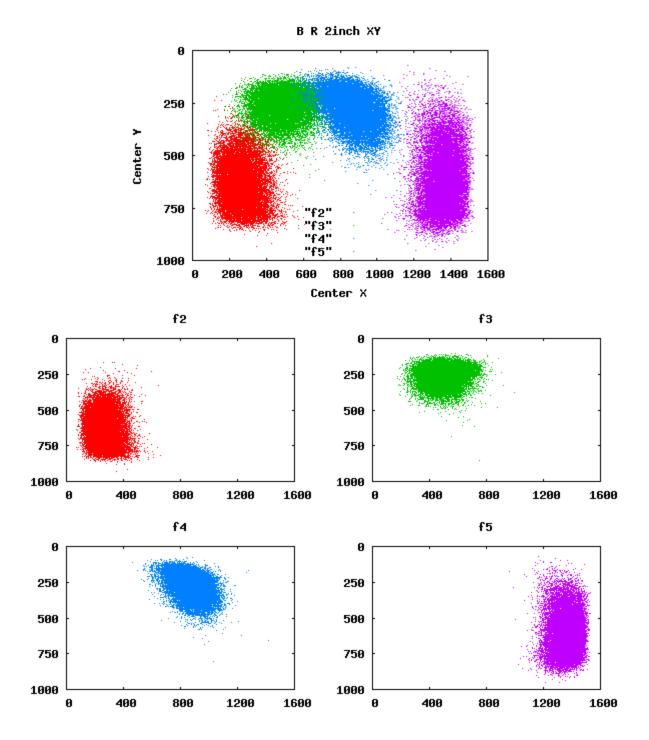


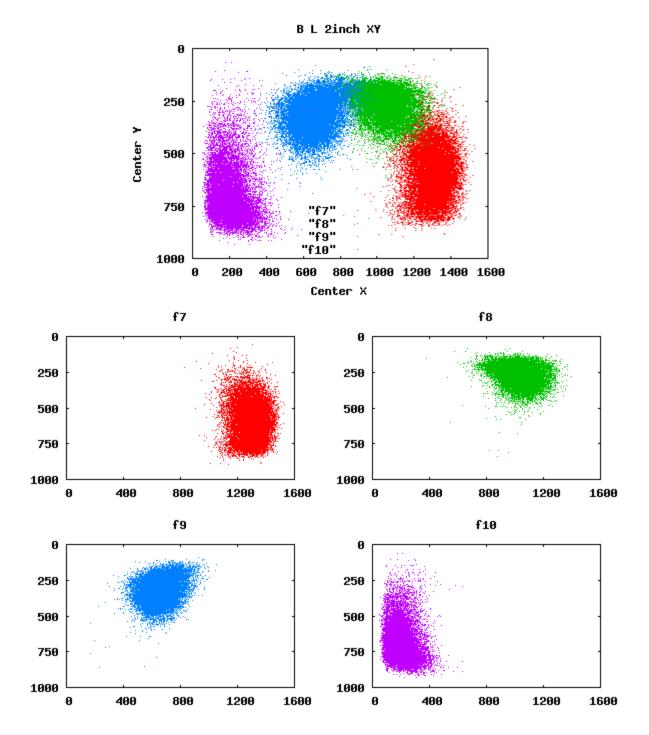




# Appendix F. Plots of 2-inch segmentation box centers.

The plots in this appendix show the distribution of the segmentation box centers (x,y) for the 2-inch data. There is a combined plot for each slap image and then a smaller plot for each finger position. The individual finger plots are better for seeing the full "spread" of x,y positions detected. The plot for the ground truth (GT) is included as a baseline for comparison. The blank lines that appear in some of the plots are most likely caused by the segmentation algorithm doing some level of sampling of the input image. The reason the lines are not evenly distributed in some plots is an artifact of the sampling when scaling the images for displaying in the report.





# Appendix G. Plots of 2-inch segmentation box widths and heights.

The plots in this appendix show the distribution of the segmentation box widths and heights for the 2-inch data. There is a combined plot for each slap image and then a smaller plot for each finger position. The individual finger plots are better for seeing the full "spread" of widths and heights detected. The widths are "spread out" on the plot by adding 350, 750 and 1050 to the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> widths plotted. The plot for the ground truth (GT) is included as a baseline for comparison. The blank lines that appear in some of the plots are most likely caused by the segmentation algorithm doing some level of sampling of the input image. The reason the lines are not evenly distributed in some plots is an artifact of the sampling when scaling the images for displaying in the report.

