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 <= d < 0) and 3 (0 <= d <= MX) show the average value for all differences in that range and rows 3 and 5 show the total count occurring in that range.

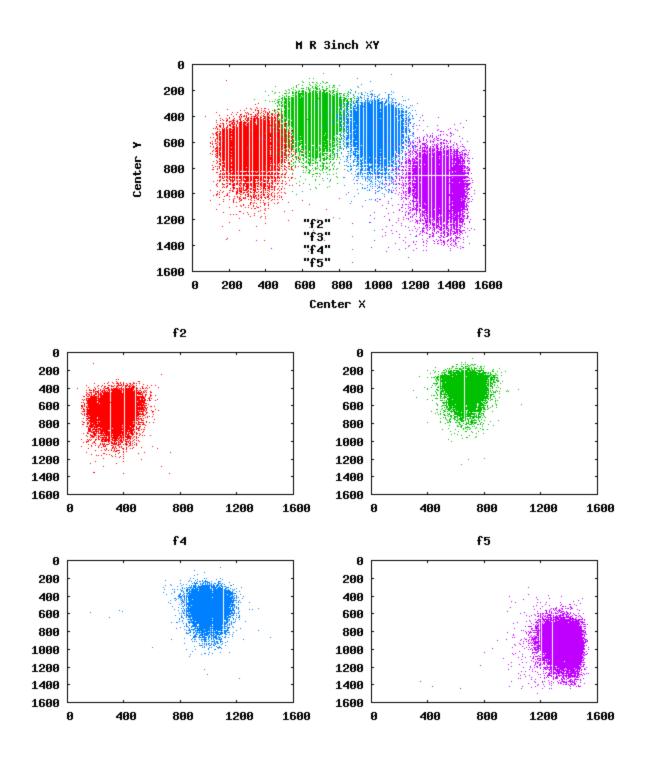
Rows 6-9 also show average difference values and bin counts but for ranges $MN-32 \le d \le MN$ and $MX \le d \le MX+32$, which are just outside the accepted tolerance ranges. Rows 10-13 tally everything greater than 32 pixels away from the accepted tolerance range, $d \le MN-32$ and d > MX+32.

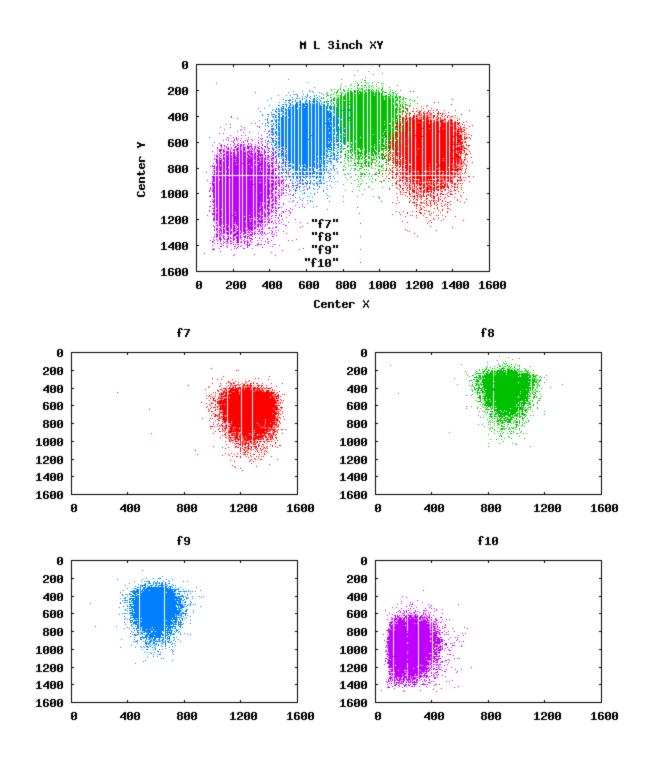
The last three rows show the total count for each bin, the overall average difference value and the standard deviation of all the difference values.

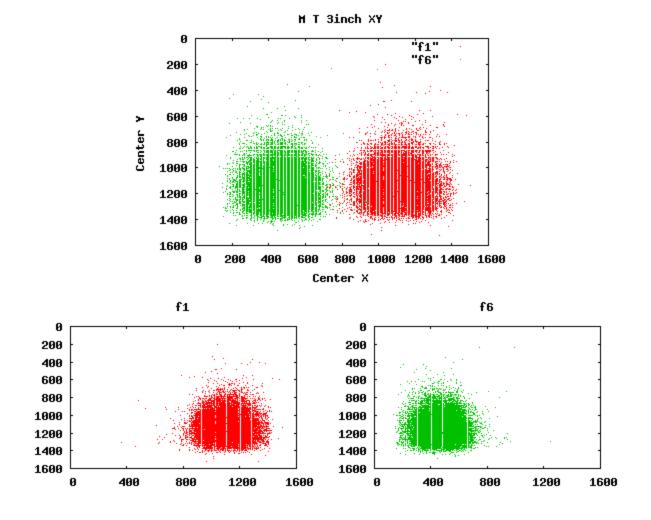
									M = /	Aware											
	R. Thumb					R. In	dex			R Middle				R. Ring				R. Little			
No Finger Found	126				36					36			42				90				
	L	R	Т	В	L	R	Т	В	L	R	Т	В	L	R	Т	В	L	R	Т	В	
MN <= d < 0	-11.30	-7.96	-18.21	-23.76	-11.99	-5.18	-22.91	-22.58	-11.78	-5.45	-23.05	-22.11	-9.04	-6.97	-22.72	-21.84	-8.88	-6.55	-21.90	-21.77	
#	18486	10473	22462	16704	21858	2391	23515	18300	21000	4469	23448	14374	17805	6617	23368	15141	17398	6565	22878	18542	
0 <= d <= MX	6.64	9.58	6.69	29.40	5.17	12.65	6.52	18.02	5.71	10.63	5.99	25.55	5.19	10.18	6.01	24.89	5.10	9.75	6.14	20.78	
#	5503	13384	1696	4930	2890	22486	1342	5956	3761	20397	1429	8636	7047	18170	1469	7452	7219	18012	1724	4737	
																		~~~~			
MN-32 <= d < MN	-36.76	-42.78	-79.32	-77.16	-39.22	-40.24	-73.79	-77.18	-36.82	-39.08	-76.98	-78.88	-39.18	-39.15	-74.49	-78.90	-40.57	-39.37	-78.71	-78.15	
	221	233	57	1132	164	19	35	329	150	30	30	741	47	97	42	991	98	89	85	822	
MX < d <= MX+32	76.53	74.94	79.92	142.79	73.25	77.75	75.00	140.40	77.00	72.47	82.10	140.48	83.92	70.03	79.43	139.78	70.25	78.91	78.33	143.47	
#	19	58	6	266	4	12	9	36	5	16	5	166	6	16	7	121	6	49	9	90	
d < MN-32	-322.85	-668.74	-238.85	-280.29	-264.69	-379.13	-516.84	-223.00	-418.30	-673.92	-176.40	-167.62	-434.64	-826.53	-261.04	-157.92	-131.17	-696.48	-358.02	-286.51	
u < 1v119-52	-522.85	-668.74 242	-238.85 69	1091		-379.13	-516.84 22	295	-418.50	-073.92 42		956	-434.04	-820.55 57	-261.04 26	1207	-131.17	-696.48 218	-358.02 151	534	
d > MX+32	680.17	412.91	871.05	226.88	16 253.24	346.56	356.40	390.79	490.29	409.29	24 242.41	209.73	688.71	361.77	303.79	239.35	661.89	178.51	619.86	294.89	
u > 1017+32 #	159	32	132	220.88	36	17	45	52	490.29	409.29	32	95	56	11	56	239.33 56	209	35	121	294.89	
π	139	52	152	233	50	17	45	JZ	42	14	52	33	50	11	50	50	209	55	121	245	
Total #	24422	24422	24422	24422	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	24968	
Average	-3.35	-4.48	-12.41	-22.08	-9.95	10.49	-21.12	-14.89	-8.59	6.80	-21.24	-10.92	-3.61	3.73	-20.60	-15.37	0.48	-0.51	-19.04	-17.54	
Std Dev	63.05	89.14	70.52	113.50	15.54	22.11	27.52	46.90	25.25	33.29	17.92	52.83	37.66	46.58	24.07	55.35	76.70	87.07	57.48	78.18	
												02.00									
		L. Th				L. In				L. M		01.00						L. Li	ttle		
No Finger Found			umb				dex				iddle	01.00		L. R 6	Ring						
No Finger Found	L	L. Th	umb	В	L	L. In	dex	В	L	L. M	iddle	В	L	L. R	Ring	в	L	L. Li		в	
No Finger Found MN <= d < 0	L -13.68	L. Th 12	umb		L -9.53	L. In 56	dex 5		<b>L</b> -11.40	L. M 5	iddle		L -12.45	L. R 6	Ring		L -11.80	L. Li 84			
	L	L. Th 12 R	umb 25 T	В	L	L. In 56 R	dex 5 T	В	L	L. M 5 R	iddle 7 T	В	L	L. R 6 R	Ring 1 T	В	L	L. Li 84 R	4 T	в	
	L -13.68	L. Th 12 R -5.85	umb 25 T -20.02	<b>B</b> -23.08	L -9.53	L. In 5( R -7.56	dex 5 T -22.46	<b>B</b> -21.33	L -11.40	L. M 5 R -6.78	iddle 7 T -22.40	<b>B</b> -21.66	L -12.45	L. R 6 R -6.81	Ring 51 T -21.62	<b>B</b> -21.66	L -11.80	L. Li 84 R -7.12	4 T -20.82	<b>B</b> -20.34	
MN <= d < 0 #	L -13.68 19696	L. Th 12 R -5.85 6490	umb 25 T -20.02 22867	<b>B</b> -23.08 15923	L -9.53 18224	L. In 56 R -7.56 5700	dex 5 -22.46 23581	<b>B</b> -21.33 17998	L -11.40 19867	L. M 5 R -6.78 4621	iddle 7 -22.40 23625	<b>B</b> -21.66 13527	L -12.45 20064	L. R 6 R -6.81 2468	Ring 51 -21.62 23082	<b>B</b> -21.66 15304	L -11.80 19217	L. Li 84 R -7.12 2062	4 T -20.82 22520	<b>B</b> -20.34 18276	
MN <= d < 0 # 0 <= d <= MX	L -13.68 19696 11.22	L. Th 12 R -5.85 6490 10.23	umb 25 T -20.02 22867 7.69	<b>B</b> -23.08 15923 33.84	L -9.53 18224 5.62	L. Inc 56 7.56 5700 10.62	dex 5 -22.46 23581 4.66	<b>B</b> -21.33 17998 17.89	L -11.40 19867 5.73	L. M 5 R -6.78 4621 11.55	iddle 7 7 -22.40 23625 4.30	<b>B</b> -21.66 13527 28.35	L -12.45 20064 6.73	L. R 6 R -6.81 2468 14.00	Ring 51 -21.62 23082 4.05	<b>B</b> -21.66 15304 27.01	L -11.80 19217 7.90	L. Li 84 R -7.12 2062 14.82	4 T -20.82 22520 4.36	<b>B</b> -20.34 18276 17.90	
MN <= d < 0 # 0 <= d <= MX	L -13.68 19696 11.22	L. Th 12 R -5.85 6490 10.23	umb 25 T -20.02 22867 7.69	<b>B</b> -23.08 15923 33.84	L -9.53 18224 5.62	L. Inc 56 7.56 5700 10.62	dex 5 -22.46 23581 4.66	<b>B</b> -21.33 17998 17.89	L -11.40 19867 5.73	L. M 5 R -6.78 4621 11.55	iddle 7 7 -22.40 23625 4.30	<b>B</b> -21.66 13527 28.35	L -12.45 20064 6.73	L. R 6 R -6.81 2468 14.00	Ring 51 -21.62 23082 4.05	<b>B</b> -21.66 15304 27.01	L -11.80 19217 7.90	L. Li 84 R -7.12 2062 14.82	4 T -20.82 22520 4.36	<b>B</b> -20.34 18276 17.90	
MN <= d < 0 # 0 <= d <= MX #	L -13.68 19696 11.22 3978	L. Th 12 R -5.85 6490 10.23 17677	umb 25 T -20.02 22867 7.69 1308	<b>B</b> -23.08 15923 33.84 6367	L -9.53 18224 5.62 6632	L. Inc 56 7.56 5700 10.62 19024	dex 5 -22.46 23581 4.66 1250	<b>B</b> -21.33 17998 17.89 6191	L -11.40 19867 5.73 4941	L. M 5 R -6.78 4621 11.55 20200	iddle 7 7 -22.40 23625 4.30 1191	<b>B</b> -21.66 13527 28.35 9785	L -12.45 20064 6.73 4706	L. R 6 R -6.81 2468 14.00 22350	Ring 1 T -21.62 23082 4.05 1722	<b>B</b> -21.66 15304 27.01 8173	L -11.80 19217 7.90 5372	L. Li 84 7.12 2062 14.82 22586	4 T -20.82 22520 4.36 1960	<b>B</b> -20.34 18276 17.90 5659	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN	L -13.68 19696 11.22 3978 -38.08	L. Th 12 R -5.85 6490 10.23 17677	umb 25 T -20.02 22867 7.69 1308 -76.61	<b>B</b> -23.08 15923 33.84 6367 -76.51	L -9.53 18224 5.62 6632 -39.49	L. Inc 56 7.56 5700 10.62 19024	dex 5 -22.46 23581 4.66 1250 -77.12	<b>B</b> -21.33 17998 17.89 6191 -78.36	L -11.40 19867 5.73 4941 -37.67	L. M 5 R -6.78 4621 11.55 20200	iddle 7 -22.40 23625 4.30 1191 -74.64	<b>B</b> -21.66 13527 28.35 9785 -78.30	L -12.45 20064 6.73 4706	L. R 6 R -6.81 2468 14.00 22350 -39.96	Ring 1 -21.62 23082 4.05 1722 -77.73	<b>B</b> -21.66 15304 27.01 8173 -77.83 544 140.18	L -11.80 19217 7.90 5372 -39.25	L. Li 84 -7.12 2062 14.82 22586	4 T -20.82 22520 4.36 1960 -79.32	<b>B</b> -20.34 18276 17.90 5659 -75.70	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN #	L -13.68 19696 11.22 3978 -38.08 494	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29	umb 5 7 22867 7.69 1308 -76.61 58	<b>B</b> -23.08 15923 33.84 6367 -76.51 648	L -9.53 18224 5.62 6632 -39.49 34	L. Inc. 56 7.56 5700 10.62 19024 -38.45 153	dex 5 -22.46 23581 4.66 1250 -77.12 38	<b>B</b> -21.33 17998 17.89 6191 -78.36 330	L -11.40 19867 5.73 4941 -37.67 75	L. M 5 R 4621 11.55 20200	iddle 7 -22.40 23625 4.30 1191 -74.64 51	<b>B</b> -21.66 13527 28.35 9785 -78.30 572	L -12.45 20064 6.73 4706 -37.83 114	L. R 6 R -6.81 2468 14.00 22350 -39.96 45	Ring 1 -21.62 23082 4.05 1722 -77.73 35	<b>B</b> -21.66 15304 27.01 8173 -77.83 544	L -11.80 19217 7.90 5372 -39.25 129	L. Li 84 -7.12 2062 14.82 22586	4 T -20.82 22520 4.36 1960 -79.32 133	<b>B</b> -20.34 18276 17.90 5659 -75.70 165	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32	L -13.68 19696 11.22 3978 -38.08 494 75.81	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03	umb 25 T -20.02 22867 7.69 1308 -76.61 58 81.31 8	<b>B</b> -23.08 15923 33.84 6367 -76.51 648 143.41	L -9.53 18224 5.62 6632 -39.49 34 77.75	L. Inc. 56 7.56 5700 10.62 19024 -38.45 153 77.36	dex 5 7 -22.46 23581 4.66 1250 -77.12 38 91.50 1	<b>B</b> -21.33 17998 17.89 6191 -78.36 330 143.15 66	L -11.40 19867 5.73 4941 -37.67 75 74.60	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12	iddle 7 -22.40 23625 4.30 1191 -74.64 51 80.33 6	<b>B</b> -21.66 13527 28.35 9785 -78.30 572 141.69	L -12.45 20064 6.73 4706 -37.83 114 72.50	L. R 6 7 -6.81 2468 14.00 22350 -39.96 45 72.88 20	Ring 1 T -21.62 23082 4.05 1722 -77.73 35 77.00	<b>B</b> -21.66 15304 27.01 8173 -77.83 544 140.18	L -11.80 19217 7.90 5372 -39.25 129 77.28	L. Li 84 -7.12 2062 14.82 22586 -44.37 67 76.00	4 T -20.82 22520 4.36 1960 -79.32 133 79.00	<b>B</b> -20.34 18276 17.90 5659 -75.70 165 144.36 156	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32	L -13.68 19696 11.22 3978 -38.08 494 75.81	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37	umb 25 T -20.02 22867 7.69 1308 -76.61 58 81.31	<b>B</b> -23.08 15923 33.84 6367 -76.51 648 143.41 433	L -9.53 18224 5.62 6632 -39.49 34 77.75	L. Inc. 56 7.56 5700 10.62 19024 -38.45 153 77.36 11	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97	<b>B</b> -21.33 17998 17.89 6191 -78.36 330 143.15 66	L -11.40 19867 5.73 4941 -37.67 75 74.60	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12	iddle 7 7 -22.40 23625 4.30 1191 -74.64 51 80.33 6	<b>B</b> -21.66 13527 28.35 9785 -78.30 572 141.69	L -12.45 20064 6.73 4706 -37.83 114 72.50	L. R 6 R -6.81 2468 14.00 22350 -39.96 45 72.88 20	Ring 1 T -21.62 23082 4.05 1722 -77.73 35 77.00	<b>B</b> -21.66 15304 27.01 8173 -77.83 544 140.18 188	L -11.80 19217 7.90 5372 -39.25 129 77.28	L. Li 84 7.7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87	4 T -20.82 22520 4.36 1960 -79.32 133 79.00 6 -356.90	<b>B</b> -20.34 18276 17.90 5659 -75.70 165 144.36	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 #	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154	T         -20.02         22867         7.69         1308         -76.61         58         81.31         8         -263.38         52	B         -23.08         15923         33.84         6367         -76.51         648         143.41         433         -384.05         666	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 200 -603.05 10	L. Inc. 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29	B         -21.33         17998         17.89         6191         -78.36         330         143.15         66         -272.67         295	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 10	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65	iddle 7 -22.40 23625 4.30 1191 -74.64 51 80.33 6 202.42 39	B         -21.66         13527         28.35         9785         -78.30         572         141.69         209         -194.51         745	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6	L. R 6 R -6.81 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51	B         -21.66         15304         27.01         8173         -77.83         544         140.18         188         -195.74         651	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 72 -259.54 75	L. Li 84 7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155	4 T -20.82 22520 4.36 1960 -79.32 133 79.00 6 -356.90 230	<ul> <li>B</li> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> <li>-609.27</li> <li>183</li> </ul>	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53 357.87	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154 402.70	T         -20.02         22867         7.69         1308         -76.61         58         81.31         8         -263.38         52         890.92	<ul> <li>B</li> <li>-23.08</li> <li>15923</li> <li>33.84</li> <li>6367</li> <li>-76.51</li> <li>648</li> <li>143.41</li> <li>433</li> <li>-384.05</li> <li>666</li> <li>216.44</li> </ul>	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 77.75 4	L. Inc. 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64 612.92	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29 399.14	B         -21.33         17998         17.89         6191         -78.36         330         143.15         66         -272.67         295         245.93	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 10 -524.17 9 723.71	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65 608.82	iddle 7 7 23625 4.30 1191 -74.64 51 80.33 6 210 246.93	B <ul> <li>-21.66</li> <li>13527</li> <li>28.35</li> <li>9785</li> </ul> <ul> <li>-78.30</li> <li>572</li> <li>141.69</li> <li>209</li> </ul> <ul> <li>-194.51</li> <li>745</li> <li>228.48</li> </ul>	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6 436.13	L. R 6 7 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72 393.17	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51 329.21	B         -21.66         15304         27.01         8173         -77.83         544         140.18         188         -195.74         651         228.88	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 72 -259.54 75 165.68	L. Li 84 7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155 287.55	4 T -20.82 22520 4.36 1960 -79.32 133 79.00 6 -356.90 230 637.85	<ul> <li>B</li> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> <li>-609.27</li> <li>183</li> <li>278.00</li> </ul>	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 #	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154	T         -20.02         22867         7.69         1308         -76.61         58         81.31         8         -263.38         52	B         -23.08         15923         33.84         6367         -76.51         648         143.41         433         -384.05         666	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 200 -603.05 10	L. Inc. 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29	B         -21.33         17998         17.89         6191         -78.36         330         143.15         66         -272.67         295	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 10	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65	iddle 7 -22.40 23625 4.30 1191 -74.64 51 80.33 6 202.42 39	B         -21.66         13527         28.35         9785         -78.30         572         141.69         209         -194.51         745	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6	L. R 6 R -6.81 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51	B         -21.66         15304         27.01         8173         -77.83         544         140.18         188         -195.74         651	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 72 -259.54 75	L. Li 84 7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155	4 T -20.82 22520 4.36 1960 -79.32 133 79.00 6 -356.90 230	<ul> <li>B</li> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> <li>-609.27</li> <li>183</li> </ul>	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32 #	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53 357.87 141	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154 402.70 35	umb 5 T -20.02 22867 7.69 1308 -76.61 58 81.31 8 -263.38 52 890.92 129	<ul> <li>B</li> <li>-23.08</li> <li>15923</li> <li>33.84</li> <li>6367</li> <li>-76.51</li> <li>648</li> <li>143.41</li> <li>433</li> <li>-384.05</li> <li>666</li> <li>216.44</li> <li>385</li> </ul>	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 77.75 4 -603.05 10 935.99 60	L. Inc. 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64 612.92 12	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29 399.14 65	<ul> <li>B</li> <li>-21.33</li> <li>17998</li> <li>17.89</li> <li>6191</li> <li>-78.36</li> <li>330</li> <li>143.15</li> <li>66</li> <li>-272.67</li> <li>295</li> <li>245.93</li> <li>84</li> </ul>	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 -524.17 9 723.71 62	L. M 5 R 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65 608.82 11	iddle 7 7 23625 4.30 1191 -74.64 51 80.33 6 202.42 39 246.93 52	B <ul> <li>-21.66</li> <li>13527</li> <li>28.35</li> <li>9785</li> </ul> <ul> <li>-78.30</li> <li>572</li> <li>141.69</li> <li>209</li> </ul> <ul> <li>-194.51</li> <li>745</li> <li>228.48</li> <li>126</li> </ul>	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6 436.13 67	L R -6.81 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72 393.17 9	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51 329.21 68	<ul> <li>B</li> <li>-21.66</li> <li>15304</li> <li>27.01</li> <li>8173</li> <li>-77.83</li> <li>544</li> <li>140.18</li> <li>188</li> <li>-195.74</li> <li>651</li> <li>228.88</li> <li>104</li> </ul>	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 77.28 72 165.68 99	L. Li 84 7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155 287.55 82	<ul> <li>T</li> <li>-20.82</li> <li>22520</li> <li>4.36</li> <li>1960</li> <li>-79.32</li> <li>133</li> <li>79.00</li> <li>6</li> <li>-356.90</li> <li>230</li> <li>637.85</li> <li>115</li> </ul>	B <ul> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> </ul> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> -609.27 <ul> <li>183</li> <li>278.00</li> <li>525</li> </ul>	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32 # Total #	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53 357.87 141 24422	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154 402.70 35	T         -20.02         22867         7.69         1308         -76.61         58         81.31         8         -263.38         52         890.92         129         24422	B         -23.08         15923         33.84         6367         -76.51         648         143.41         433         -384.05         666         216.44         385	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 -603.05 10 935.99 60	L. Ind 57 R -7.56 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64 612.92 12	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29 399.14 65 24964	B         -21.33         17998         17.89         6191         -78.36         330         143.15         66         -272.67         295         245.93         84	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 -524.17 9 723.71 62 24964	L. M 5 R -6.78 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65 608.82 11 24964	iddle 7 7 23625 4.30 1191 -74.64 51 80.33 6 -202.42 39 246.93 52 24964	B         -21.66         13527         28.35         9785         -78.30         572         141.69         209         -194.51         745         228.48         126	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6 436.13 67 24964	L. R 6 R 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72 393.17 9 24964	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51 329.21 68 24964	B         -21.66         15304         27.01         8173         -77.83         544         140.18         188         -195.74         651         228.88         104         24964	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 -259.54 75 165.68 99 24964	L. Li 84 7.7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155 287.55 82 24964	T         -20.82         22520         4.36         1960         -79.32         133         79.00         6         -356.90         230         637.85         115	<ul> <li>B</li> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> <li>-609.27</li> <li>183</li> <li>278.00</li> <li>525</li> <li>24964</li> </ul>	
MN <= d < 0 # 0 <= d <= MX # MN-32 <= d < MN # MX < d <= MX+32 # d < MN-32 # d > MX+32 #	L -13.68 19696 11.22 3978 -38.08 494 75.81 60 -218.64 53 357.87 141	L. Th 12 R -5.85 6490 10.23 17677 -45.97 29 77.03 37 -623.07 154 402.70 35	umb 5 T -20.02 22867 7.69 1308 -76.61 58 81.31 8 -263.38 52 890.92 129	<ul> <li>B</li> <li>-23.08</li> <li>15923</li> <li>33.84</li> <li>6367</li> <li>-76.51</li> <li>648</li> <li>143.41</li> <li>433</li> <li>-384.05</li> <li>666</li> <li>216.44</li> <li>385</li> </ul>	L -9.53 18224 5.62 6632 -39.49 34 77.75 4 77.75 4 -603.05 10 935.99 60	L. Inc. 5700 10.62 19024 -38.45 153 77.36 11 -1061.69 64 612.92 12	dex T -22.46 23581 4.66 1250 -77.12 38 91.50 1 -260.97 29 399.14 65	<ul> <li>B</li> <li>-21.33</li> <li>17998</li> <li>17.89</li> <li>6191</li> <li>-78.36</li> <li>330</li> <li>143.15</li> <li>66</li> <li>-272.67</li> <li>295</li> <li>245.93</li> <li>84</li> </ul>	L -11.40 19867 5.73 4941 -37.67 75 74.60 10 -524.17 9 723.71 62	L. M 5 R 4621 11.55 20200 -38.72 55 79.88 12 -891.26 65 608.82 11	iddle 7 7 23625 4.30 1191 -74.64 51 80.33 6 202.42 39 246.93 52	B <ul> <li>-21.66</li> <li>13527</li> <li>28.35</li> <li>9785</li> </ul> <ul> <li>-78.30</li> <li>572</li> <li>141.69</li> <li>209</li> </ul> <ul> <li>-194.51</li> <li>745</li> <li>228.48</li> <li>126</li> </ul>	L -12.45 20064 6.73 4706 -37.83 114 72.50 7 -354.33 6 436.13 67	L R -6.81 2468 14.00 22350 -39.96 45 72.88 20 -599.00 72 393.17 9	Ring T -21.62 23082 4.05 1722 -77.73 35 77.00 6 -228.01 51 329.21 68	<ul> <li>B</li> <li>-21.66</li> <li>15304</li> <li>27.01</li> <li>8173</li> <li>-77.83</li> <li>544</li> <li>140.18</li> <li>188</li> <li>-195.74</li> <li>651</li> <li>228.88</li> <li>104</li> </ul>	L -11.80 19217 7.90 5372 -39.25 129 77.28 72 77.28 72 165.68 99	L. Li 84 7.12 2062 14.82 22586 -44.37 67 76.00 12 -214.87 155 287.55 82	<ul> <li>T</li> <li>-20.82</li> <li>22520</li> <li>4.36</li> <li>1960</li> <li>-79.32</li> <li>133</li> <li>79.00</li> <li>6</li> <li>-356.90</li> <li>230</li> <li>637.85</li> <li>115</li> </ul>	B <ul> <li>-20.34</li> <li>18276</li> <li>17.90</li> <li>5659</li> </ul> <li>-75.70</li> <li>165</li> <li>144.36</li> <li>156</li> -609.27 <ul> <li>183</li> <li>278.00</li> <li>525</li> </ul>	

## 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.

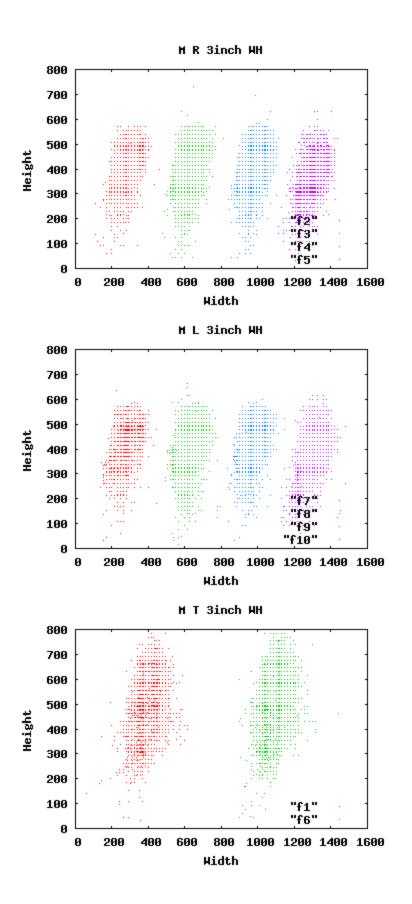






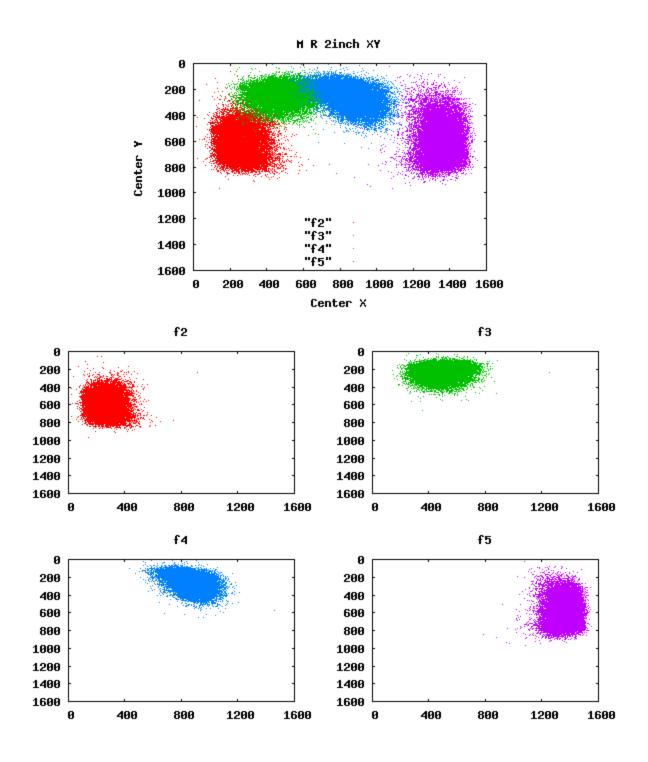
#### Appendix E. Plots of 3-inch segmentation box widths and heights.

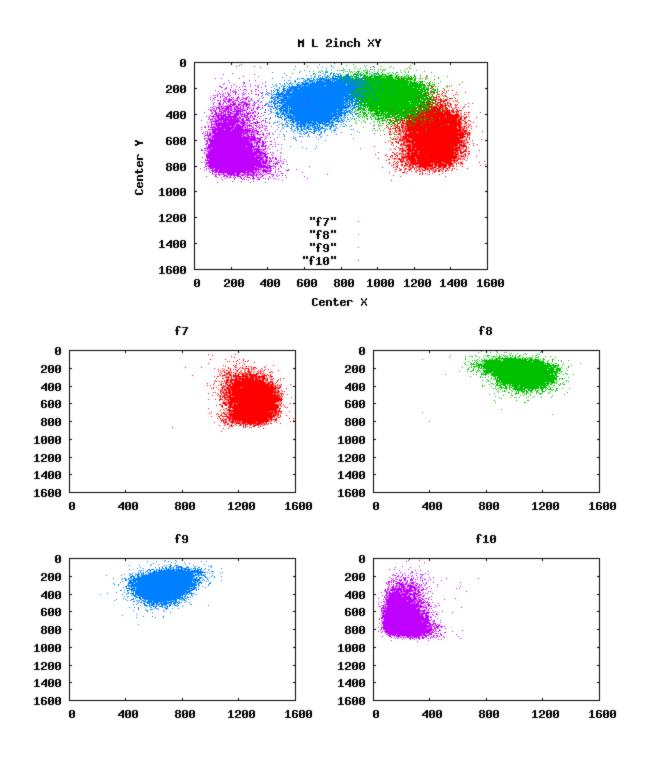
The plots in this appendix show the distribution of the segmentation box widths and heights for the 3-inch data. There is a combined plot for each slap image and then a smaller plot for each finger position. The individual finger plots are better for seeing the full "spread" of widths and heights detected. The widths are "spread out" on the plot by adding 350, 750 and 1050 to the 2nd, 3rd, and 4th 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 2nd, 3rd, and 4th 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.

