

Appendix A: Selective Search

Image 1:

Color Strategy

Total proposals = 273

Number of Ground Truth Boxes = 4

Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[115, 228, 229, 367]]

Number of final boxes = 1

Final boxes = [[115, 228, 229, 367]]

Recall = 0.25



All Strategy

Total proposals = 284

Number of Ground Truth Boxes = 4

Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[12, 239, 116, 375]]

Number of final boxes = 1

Final boxes = [[12, 239, 116, 375]]

Recall = 0.25



Image 2:

Color Strategy

Total proposals = 250

Number of Ground Truth Boxes = 2

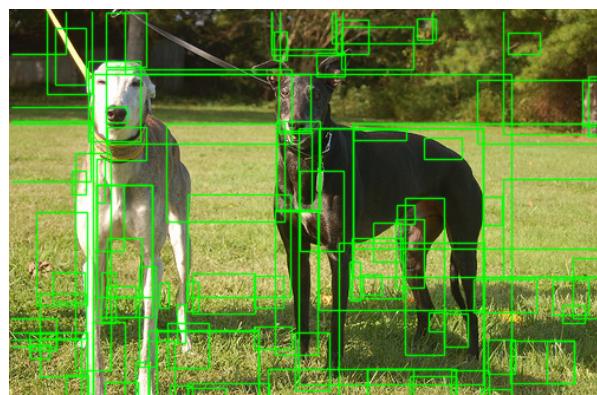
Number of Qualified Boxes with IOU > 0.5 = 2

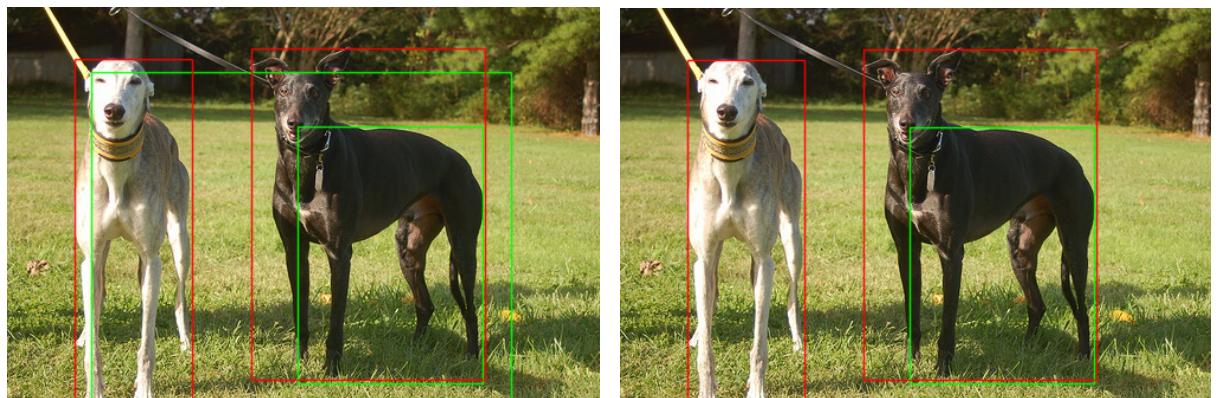
Qualified Boxes = [[245, 101, 401, 318], [71, 55, 425, 333]]

Number of final boxes = 1

Final boxes = [[245, 101, 401, 318]]

Recall = 0.5





All Strategy

Total proposals = 266

Number of Ground Truth Boxes = 2

Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[77, 97, 156, 315]]

Number of final boxes = 1

Final boxes = [[77, 97, 156, 315]]

Recall = 0.5

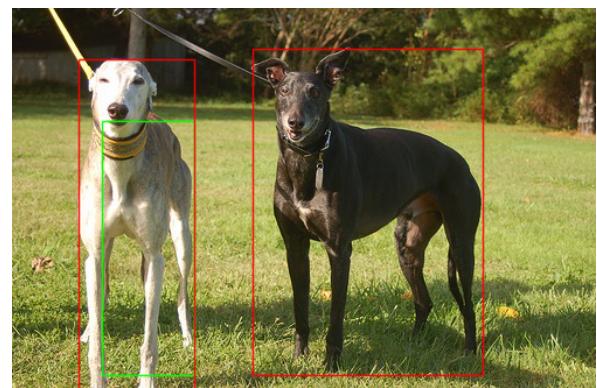
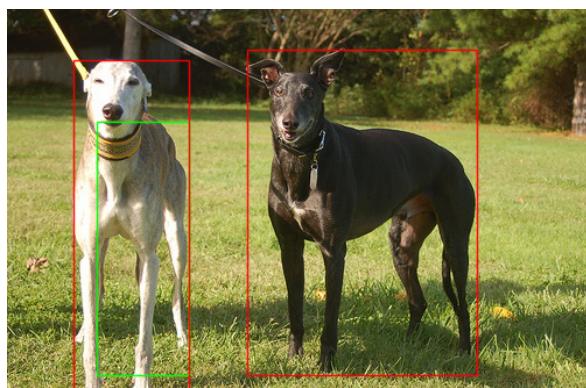
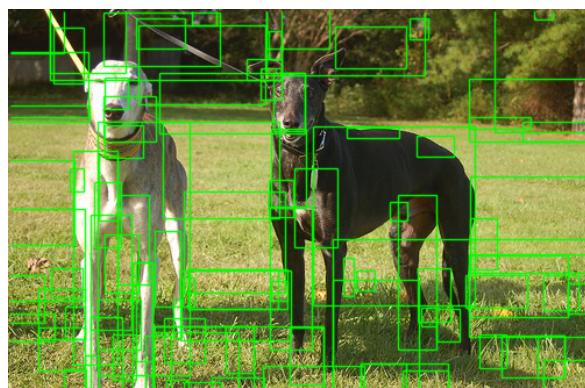


Image 3:

Color Strategy

Total proposals = 252

Number of Ground Truth Boxes = 4

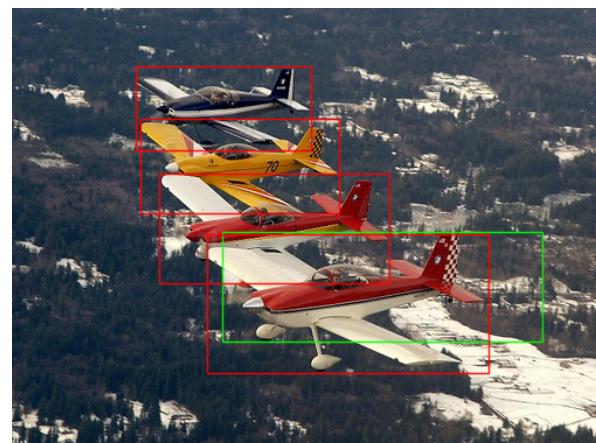
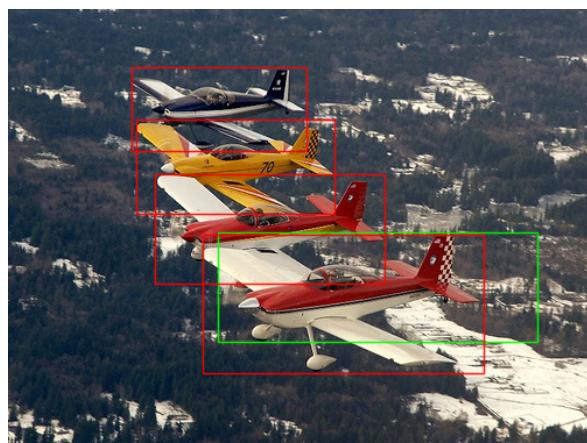
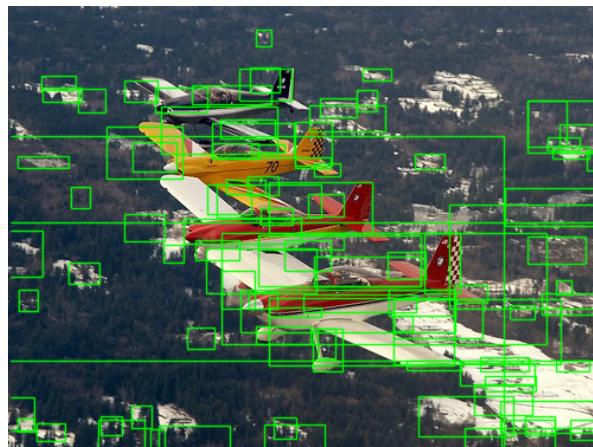
Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[180, 192, 454, 286]]

Number of final boxes = 1

Final boxes = [[180, 192, 454, 286]]

Recall = 0.25



All Strategy

Total proposals = 282

Number of Ground Truth Boxes = 4

Number of Qualified Boxes with IOU > 0.5 = 2

Qualified Boxes = [[98, 57, 266, 125], [180, 194, 425, 276]]

Number of final boxes = 2

Final boxes = [[98, 57, 266, 125], [180, 194, 425, 276]]

Recall = 0.5

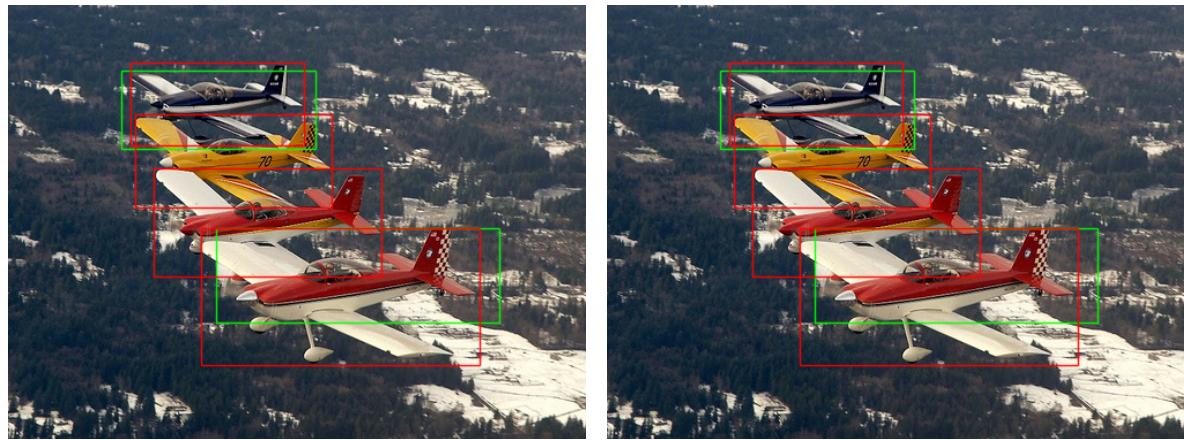
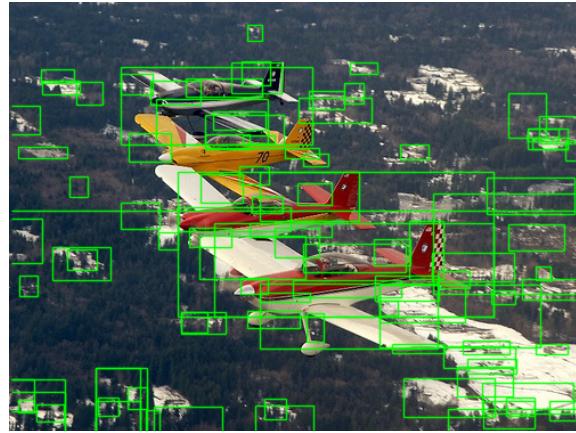


Image 4:

Color Strategy

Total proposals = 167

Number of Ground Truth Boxes = 3

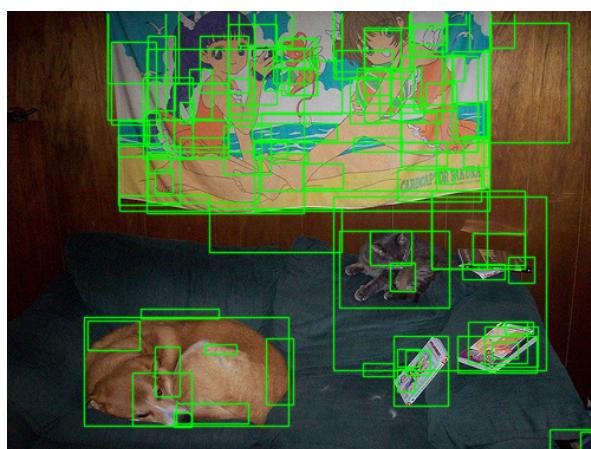
Number of Qualified Boxes with $\text{IOU} > 0.5$ = 2

Qualified Boxes = [[65, 259, 238, 351], [281, 186, 374, 251]]

Number of final boxes = 2

Final boxes = [[65, 259, 238, 351], [281, 186, 374, 251]]

Recall = 0.6666666666666666





All Strategy

Total proposals = 182

Number of Ground Truth Boxes = 3

Number of Qualified Boxes with IOU > 0.5 = 2

Qualified Boxes = [[65, 259, 238, 351], [281, 186, 374, 251]]

Number of final boxes = 2

Final boxes = [[65, 259, 238, 351], [281, 186, 374, 251]]

Recall = 0.6666666666666666

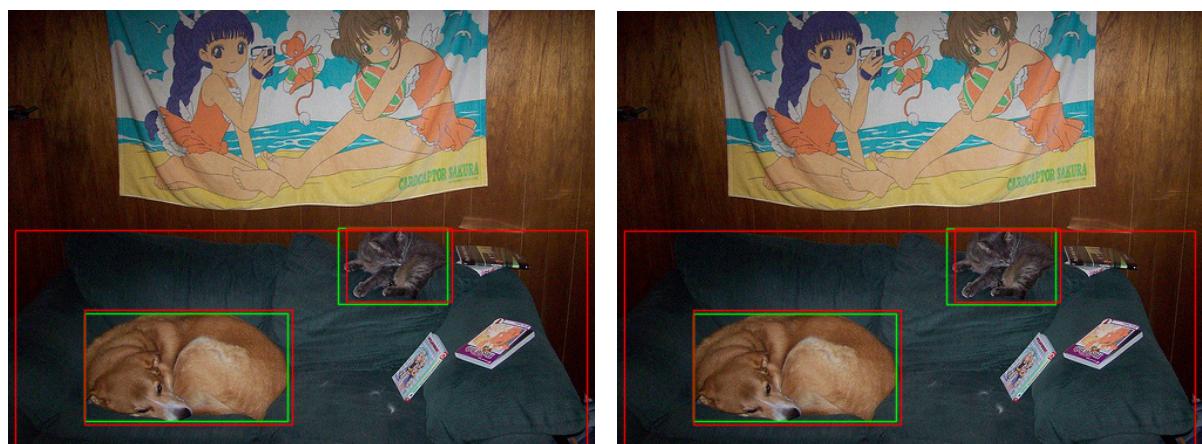


Image 5:

Color Strategy

Total proposals = 334

Number of Ground Truth Boxes = 13

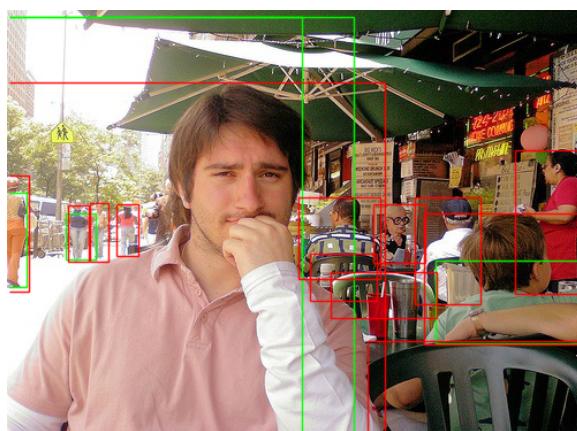
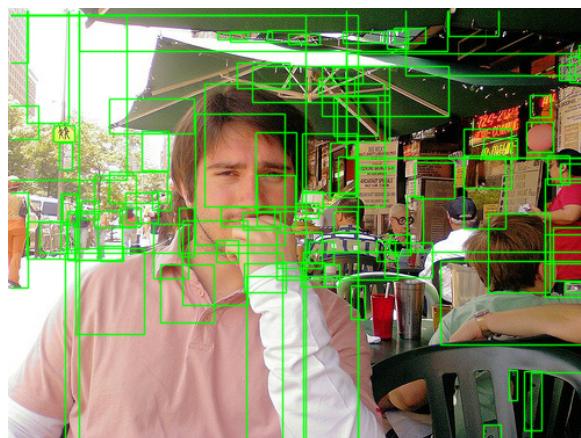
Number of Qualified Boxes with IOU > 0.5 = 6

Qualified Boxes = [[0, 0, 500, 375], [0, 6, 301, 375], [0, 6, 256, 375], [372, 218, 500, 290], [0, 159, 17, 241], [51, 177, 77, 217]]

Number of final boxes = 4

Final boxes = [[0, 6, 301, 375], [372, 218, 500, 290], [0, 159, 17, 241], [51, 177, 77, 217]]

Recall = 0.3076923076923077



All Strategy

Total proposals = 354

Number of Ground Truth Boxes = 13

Number of Qualified Boxes with IOU > 0.5 = 8

Qualified Boxes = [[283, 228, 354, 269], [47, 91, 256, 375], [362, 218, 500, 291], [372, 218, 500, 290], [352, 189, 406, 240], [0, 159, 17, 241], [84, 184, 114, 215], [72, 175, 98, 216]]

Number of final boxes = 7

Final boxes = [[283, 228, 354, 269], [47, 91, 256, 375], [362, 218, 500, 291], [352, 189, 406, 240], [0, 159, 17, 241], [84, 184, 114, 215], [72, 175, 98, 216]]

Recall = 0.5384615384615384

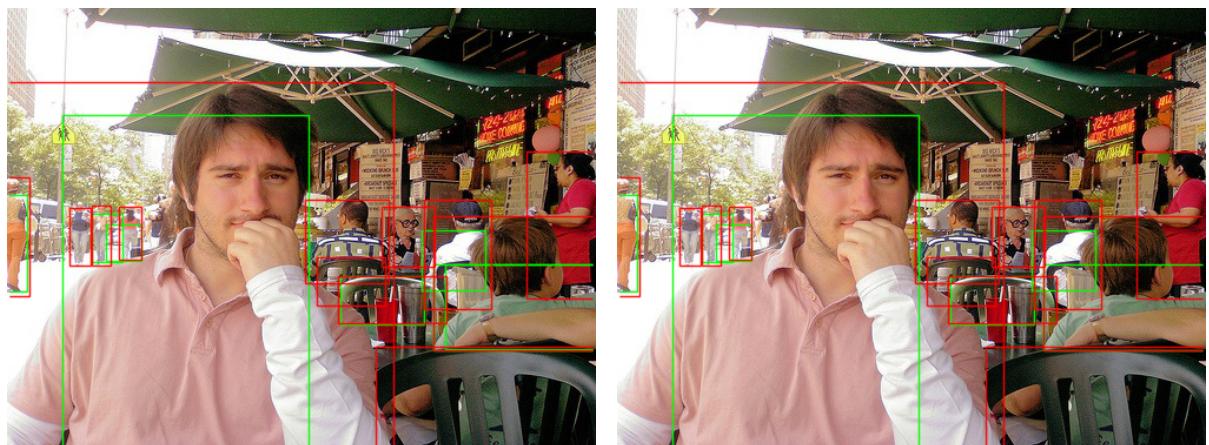
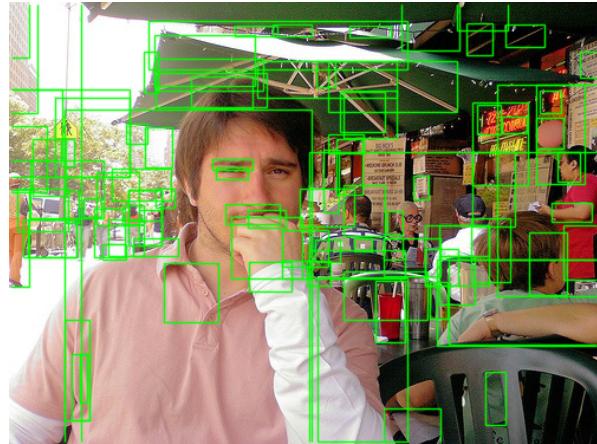


Image 6:

Color Strategy

Total proposals = 293

Number of Ground Truth Boxes = 2

Number of Qualified Boxes with IOU > 0.5 = 0

Qualified Boxes = []

Number of final boxes = 0

Final boxes = []

Recall = 0.0





All Strategy

Total proposals = 318

Number of Ground Truth Boxes = 2

Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[382, 101, 500, 240]]

Number of final boxes = 1

Final boxes = [[382, 101, 500, 240]]

Recall = 0.5

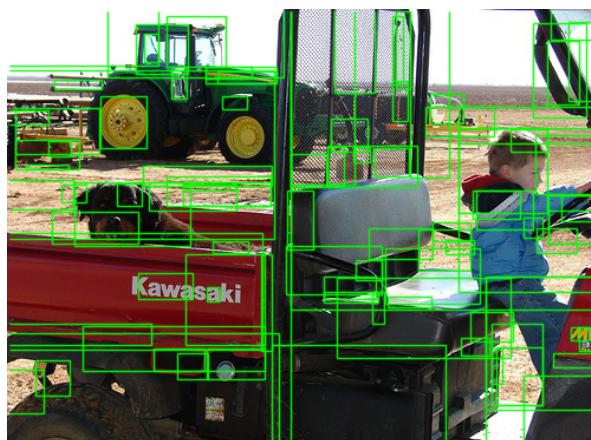


Image 7:

Color Strategy

Total proposals = 151

Number of Ground Truth Boxes = 3

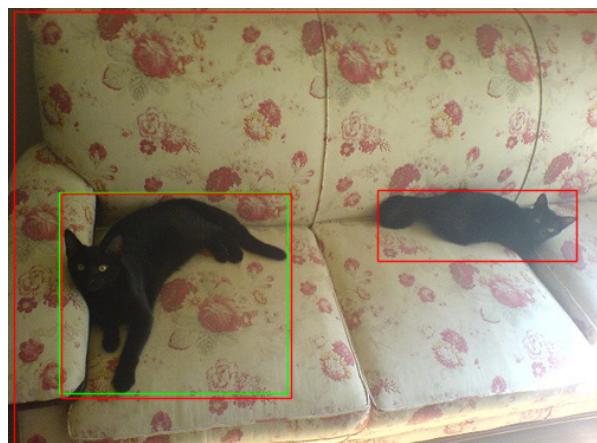
Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[43, 156, 236, 326]]

Number of final boxes = 1

Final boxes = [[43, 156, 236, 326]]

Recall = 0.3333333333333333



All Strategy

Total proposals = 169

Number of Ground Truth Boxes = 3

Number of Qualified Boxes with IOU > 0.5 = 1

Qualified Boxes = [[43, 156, 236, 326]]

Number of final boxes = 1

Final boxes = [[43, 156, 236, 326]]

Recall = 0.3333333333333333

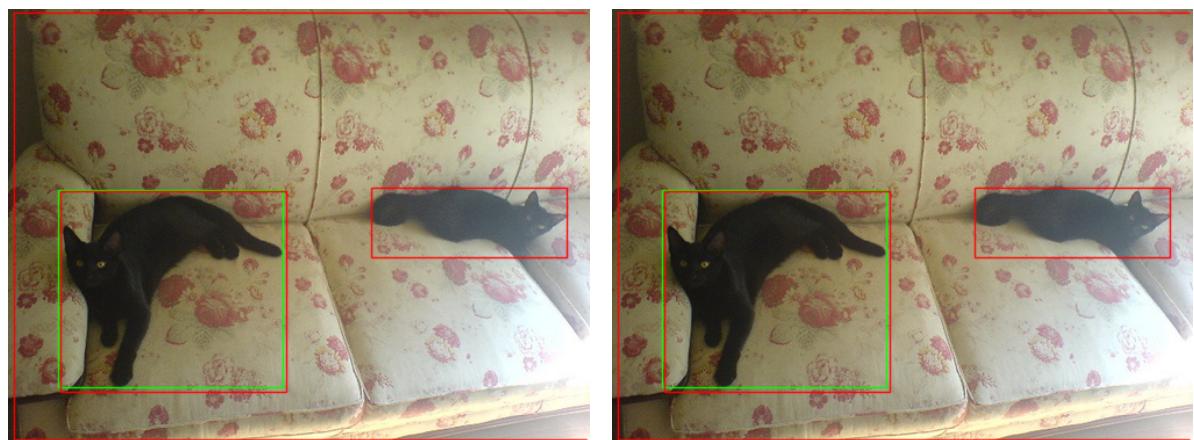


Image 8:

Color Strategy

Total proposals = 339

Number of Ground Truth Boxes = 7

Number of Qualified Boxes with IOU > 0.5 = 2

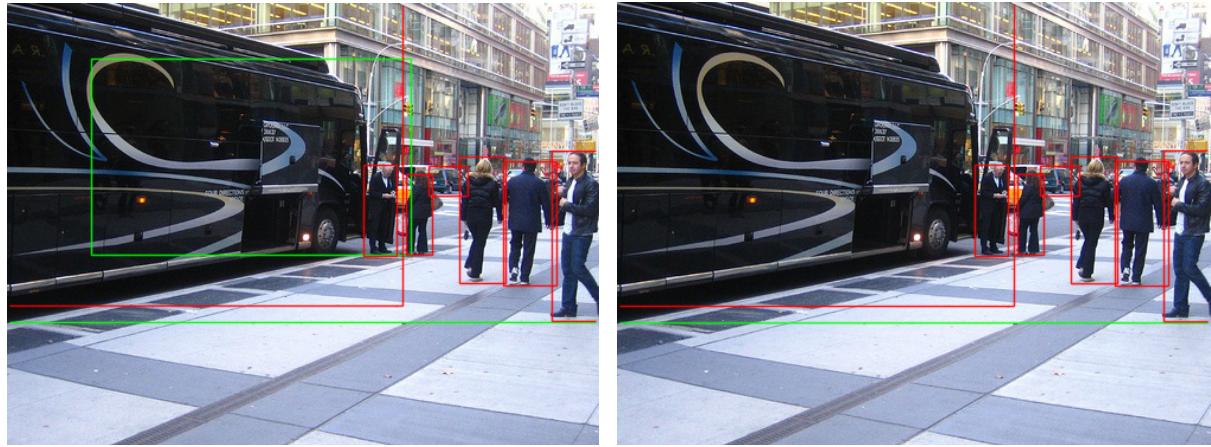
Qualified Boxes = [[0, 0, 500, 270], [71, 47, 341, 213]]

Number of final boxes = 1

Final boxes = [[0, 0, 500, 270]]

Recall = 0.14285714285714285





All Strategy

Total proposals = 358

Number of Ground Truth Boxes = 7

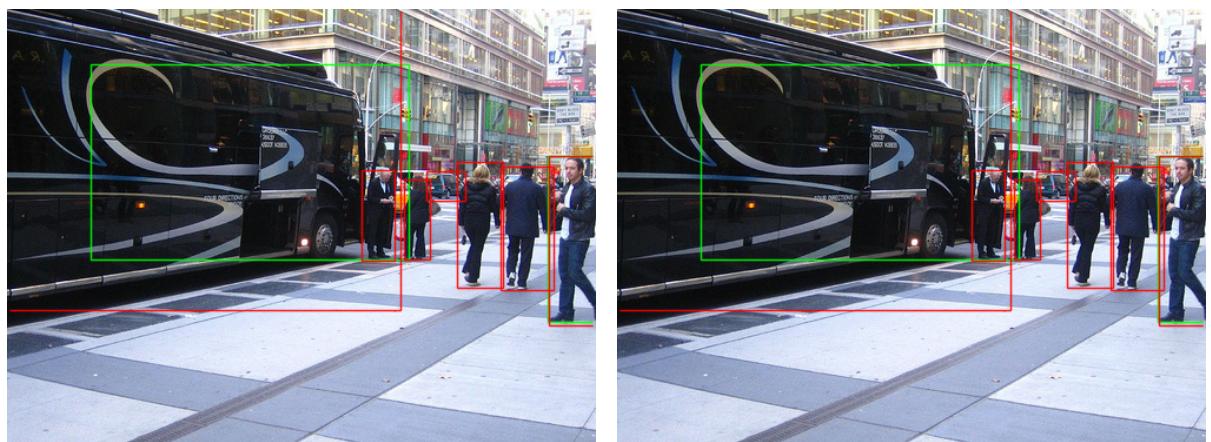
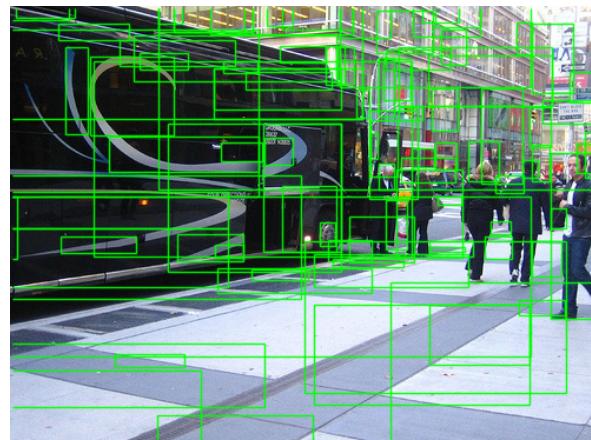
Number of Qualified Boxes with IOU > 0.5 = 2

Qualified Boxes = [[71, 47, 341, 213], [459, 125, 500, 266]]

Number of final boxes = 2

Final boxes = [[71, 47, 341, 213], [459, 125, 500, 266]]

Recall = 0.2857142857142857



Appendix B: EdgeBoxes

Image 1:

Number of Ground Truth Boxes = 4

Number of Qualified Boxes with IOU > 0.5 = 17

Qualified Boxes = [[310, 156, 497, 372], [260, 87, 421, 372], [310, 158, 395, 331], [124, 215, 226, 335], [103, 216, 228, 370], [103, 129, 231, 336], [123, 128, 274, 341], [78, 178, 245, 372], [116, 180, 247, 331], [5, 223, 137, 367], [2, 112, 151, 368], [1, 176, 106, 366], [1, 158, 163, 331], [103, 125, 497, 373], [1, 114, 388, 373], [115, 77, 497, 320], [1, 78, 397, 263]]

Number of final boxes = 4

Final boxes = [[260, 87, 421, 372], [103, 216, 228, 370], [1, 176, 106, 366], [115, 77, 497, 320]]

Recall = 1.0

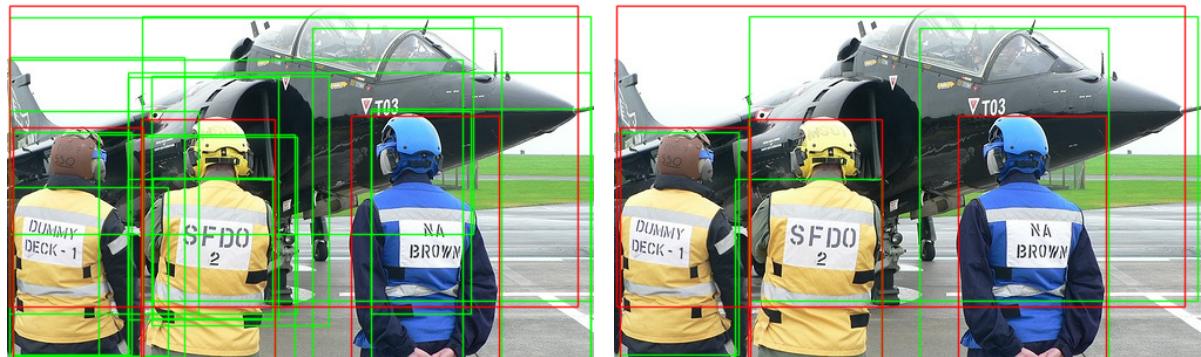
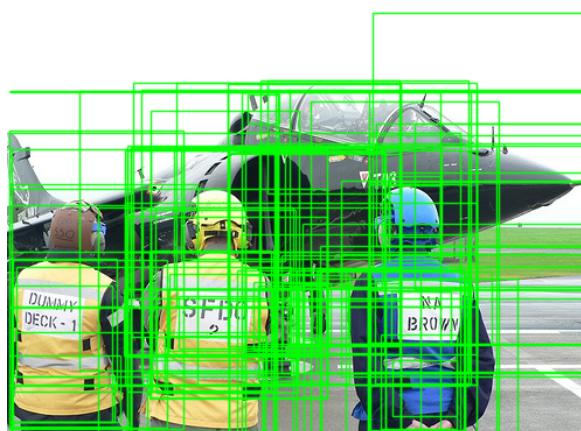


Image 2:

Number of Ground Truth Boxes = 2

Number of Qualified Boxes with IOU > 0.5 = 7

Qualified Boxes = [[52, 41, 155, 330], [68, 76, 155, 288], [64, 161, 155, 333], [64, 54, 159, 237], [54, 28, 403, 330], [219, 56, 435, 323], [242, 110, 403, 318]]

Number of final boxes = 2

Final boxes = [[52, 41, 155, 330], [219, 56, 435, 323]]

Recall = 1.0

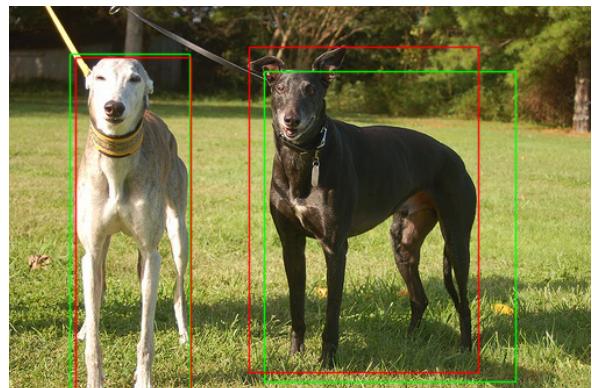
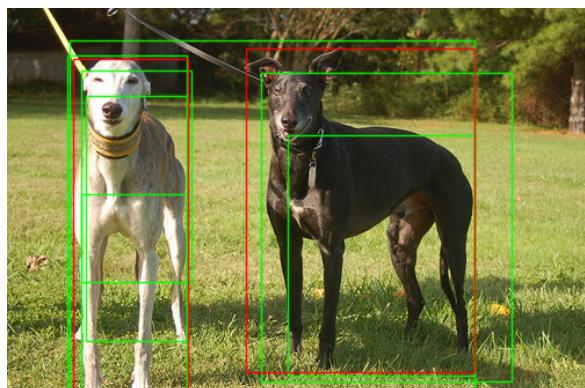


Image 3:

Number of Ground Truth Boxes = 4

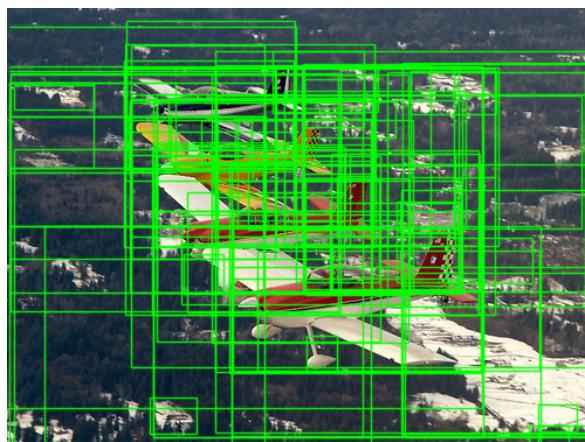
Number of Qualified Boxes with IOU > 0.5 = 15

Qualified Boxes = [[102, 51, 246, 138], [100, 45, 245, 96], [106, 78, 285, 187], [128, 74, 246, 174], [106, 93, 220, 196], [178, 81, 285, 174], [127, 119, 289, 174], [105, 79, 312, 244], [127, 117, 313, 204], [128, 127, 319, 286], [175, 148, 388, 245], [106, 126, 288, 215], [190, 135, 405, 313], [193, 232, 406, 311], [214, 208, 455, 311]]

Number of final boxes = 4

Final boxes = [[102, 51, 246, 138], [106, 78, 285, 187], [128, 127, 319, 286], [190, 135, 405, 313]]

Recall = 1.0



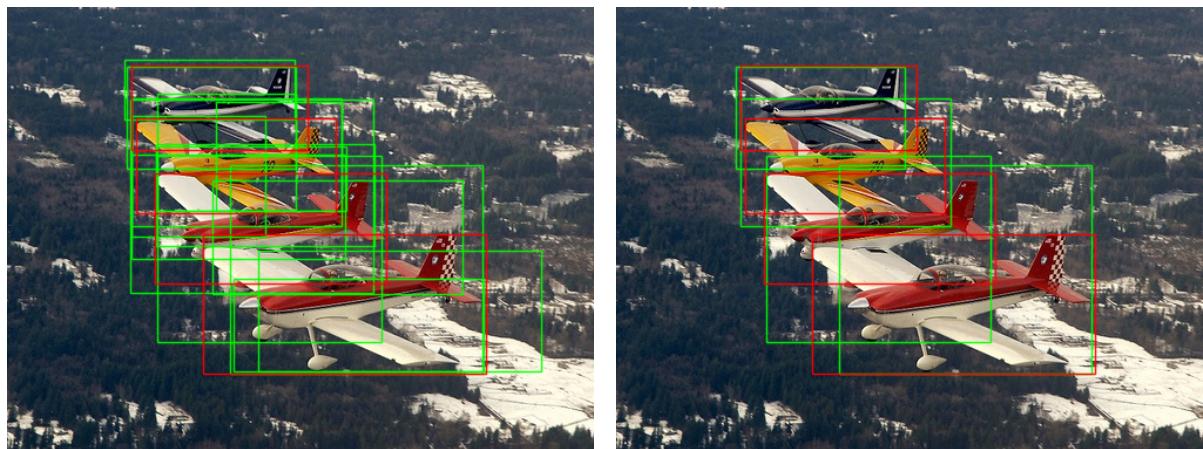


Image 4:

Number of Ground Truth Boxes = 3

Number of Qualified Boxes with IOU > 0.5 = 4

Qualified Boxes = [[61, 258, 242, 358], [125, 276, 242, 358], [62, 258, 375, 358], [46, 183, 493, 358]]

Number of final boxes = 2

Final boxes = [[61, 258, 242, 358], [46, 183, 493, 358]]

Recall = 0.6666666666666666

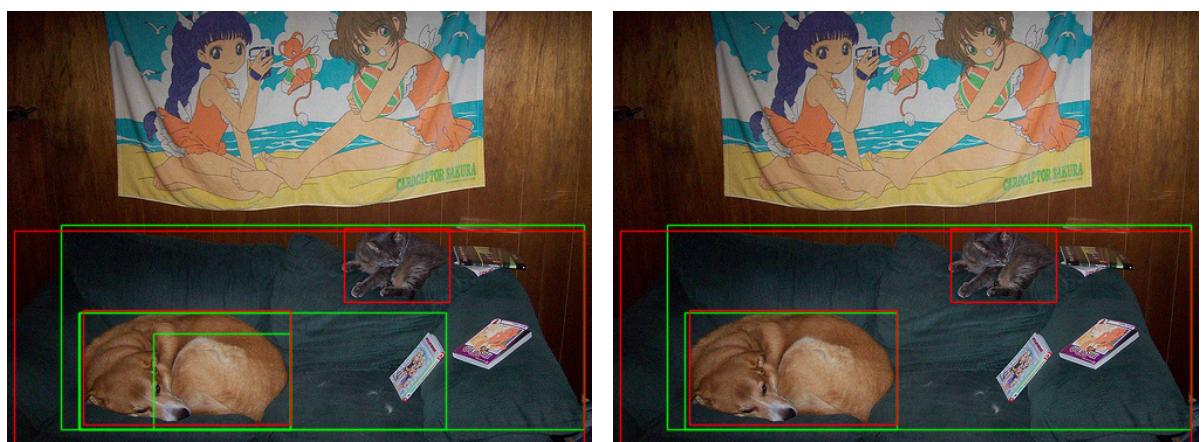
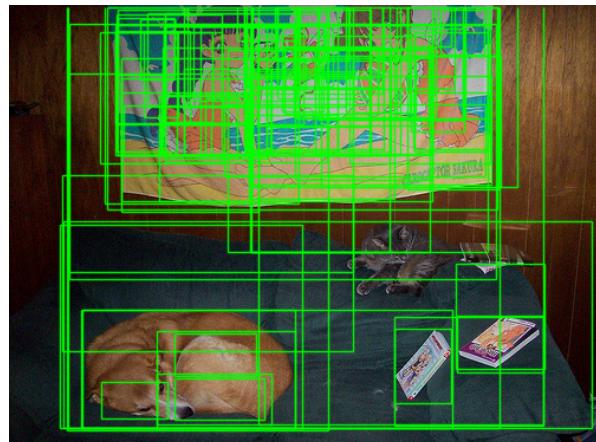


Image 5:

Number of Ground Truth Boxes = 13

Number of Qualified Boxes with IOU > 0.5 = 12

Qualified Boxes = [[292, 225, 497, 373], [308, 273, 497, 372], [4, 73, 405, 375], [7, 178, 390, 375], [5, 94, 256, 375], [123, 94, 312, 375], [347, 164, 499, 290], [274, 179, 497, 292], [389, 168, 497, 271], [353, 226, 500, 290], [353, 168, 500, 246], [344, 146, 409, 232]]

Number of final boxes = 4

Final boxes = [[308, 273, 497, 372], [4, 73, 405, 375], [347, 164, 499, 290], [344, 146, 409, 232]]

Recall = 0.3076923076923077

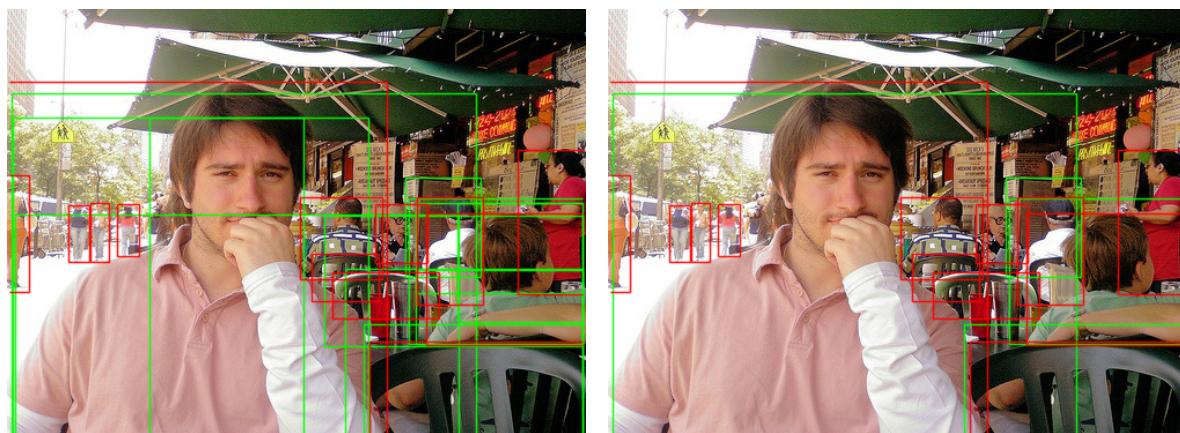


Image 6:

Number of Ground Truth Boxes = 2

Number of Qualified Boxes with IOU > 0.5 = 4

Qualified Boxes = [[384, 137, 495, 253], [391, 155, 500, 375], [379, 138, 500, 311], [306, 97, 497, 308]]

Number of final boxes = 1

Final boxes = [[379, 138, 500, 311]]

Recall = 0.5



Image 7:

Number of Ground Truth Boxes = 3

Number of Qualified Boxes with IOU > 0.5 = 8

Qualified Boxes = [[27, 128, 228, 372], [292, 146, 459, 212], [26, 24, 495, 369], [6, 7, 295, 337], [25, 129, 452, 372], [196, 9, 493, 368], [8, 64, 389, 334], [99, 78, 493, 334]]

Number of final boxes = 3

Final boxes = [[27, 128, 228, 372], [292, 146, 459, 212], [26, 24, 495, 369]]

Recall = 1.0



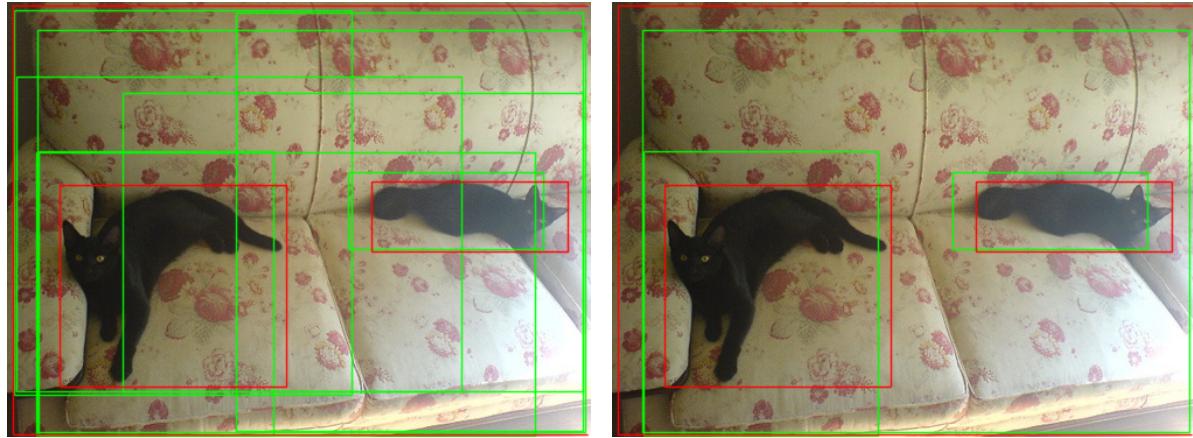


Image 8:

Number of Ground Truth Boxes = 7

Number of Qualified Boxes with IOU > 0.5 = 12

Qualified Boxes = [[1, 7, 432, 282], [4, 9, 283, 166], [3, 8, 284, 264], [44, 7, 382, 172], [66, 8, 344, 229], [1, 45, 269, 217], [466, 141, 494, 262], [418, 134, 459, 243], [389, 138, 459, 245], [379, 139, 438, 245], [364, 156, 417, 240], [332, 155, 365, 211]]

Number of final boxes = 5

Final boxes = [[3, 8, 284, 264], [466, 141, 494, 262], [418, 134, 459, 243], [379, 139, 438, 245], [332, 155, 365, 211]]

Recall = 0.7142857142857143

