## **1000**

detections\_count = 166641, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 27.31% (TP = 23, FP = 35)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 5.68% (TP = 14, FP = 190)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 9.28% (TP = 27, FP = 314)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 6.94% (TP = 11, FP = 143)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 20.74% (TP = 118, FP = 1112)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 9.26% (TP = 25, FP = 186)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 16.88% (TP = 11, FP = 58)

class\_id = 7, name = coca\_cola\_05, ap = 3.54% (TP = 0, FP = 17)

class\_id = 8, name = coca\_cola\_light\_05, ap = 21.08% (TP = 20, FP = 33)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 47.25% (TP = 145, FP = 664)

class\_id = 10, name = tegernseer\_hell\_03, ap = 21.24% (TP = 49, FP = 264)

class\_id = 11, name = corny\_nussvoll, ap = 34.91% (TP = 51, FP = 39)

class\_id = 12, name = corny\_nussvoll\_single, ap = 20.23% (TP = 25, FP = 58)

class\_id = 13, name = corny\_schoko\_banane, ap = 5.73% (TP = 11, FP = 77)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 22.52% (TP = 100, FP = 584)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 19.90% (TP = 14, FP = 16)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 12.48% (TP = 17, FP = 80)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 30.75% (TP = 21, FP = 22)

class\_id = 18, name = caona\_cocoa, ap = 70.33% (TP = 51, FP = 19)

class\_id = 19, name = cocoba\_cocoa, ap = 33.44% (TP = 48, FP = 37)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 59.68% (TP = 40, FP = 10)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 39.93% (TP = 96, FP = 266)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 47.98% (TP = 45, FP = 23)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 28.24% (TP = 41, FP = 52)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 57.48% (TP = 65, FP = 64)

class\_id = 25, name = apple\_golden\_delicious, ap = 5.35% (TP = 27, FP = 442)

class\_id = 26, name = apple\_granny\_smith, ap = 6.46% (TP = 5, FP = 71)

class\_id = 27, name = apple\_red\_boskoop, ap = 36.89% (TP = 91, FP = 187)

class\_id = 28, name = avocado, ap = 28.37% (TP = 67, FP = 173)

class\_id = 29, name = banana\_bundle, ap = 47.68% (TP = 39, FP = 36)

class\_id = 30, name = banana\_single, ap = 20.64% (TP = 38, FP = 93)

class\_id = 31, name = clementine, ap = 58.87% (TP = 80, FP = 251)

class\_id = 32, name = clementine\_single, ap = 26.01% (TP = 126, FP = 268)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 17.92% (TP = 23, FP = 217)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 13.12% (TP = 13, FP = 36)

class\_id = 35, name = kiwi, ap = 26.42% (TP = 62, FP = 190)

class\_id = 36, name = orange\_single, ap = 42.60% (TP = 39, FP = 244)

class\_id = 37, name = oranges, ap = 62.59% (TP = 24, FP = 30)

class\_id = 38, name = pear, ap = 21.08% (TP = 47, FP = 98)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 23.08% (TP = 22, FP = 121)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 33.78% (TP = 58, FP = 65)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 15.88% (TP = 21, FP = 68)

class\_id = 42, name = franken\_tafelreiniger, ap = 32.14% (TP = 97, FP = 154)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 22.62% (TP = 48, FP = 142)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 12.28% (TP = 25, FP = 142)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 9.65% (TP = 0, FP = 6)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 4.16% (TP = 18, FP = 319)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 12.63% (TP = 20, FP = 65)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 14.00% (TP = 14, FP = 69)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 3.12% (TP = 27, FP = 465)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 16.71% (TP = 48, FP = 186)

class\_id = 51, name = cucumber, ap = 26.85% (TP = 17, FP = 15)

class\_id = 52, name = carrot, ap = 19.74% (TP = 65, FP = 220)

class\_id = 53, name = corn\_salad, ap = 26.56% (TP = 27, FP = 51)

class\_id = 54, name = lettuce, ap = 84.22% (TP = 64, FP = 35)

class\_id = 55, name = vine\_tomatoes, ap = 42.67% (TP = 67, FP = 75)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 50.53% (TP = 22, FP = 15)

class\_id = 57, name = rocket, ap = 42.74% (TP = 53, FP = 48)

class\_id = 58, name = salad\_iceberg, ap = 66.93% (TP = 140, FP = 112)

class\_id = 59, name = zucchini, ap = 30.95% (TP = 58, FP = 78)

for conf\_thresh = 0.25, precision = 0.23, recall = 0.34, F1-score = 0.27

for conf\_thresh = 0.25, TP = 2660, FP = 9150, FN = 5069, average IoU = 15.00 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.279673, or 27.97 %

Total Detection Time: 772 Seconds

## 

## 

## 

## **2000**

detections\_count = 68235, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 26.98% (TP = 41, FP = 191)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 16.73% (TP = 21, FP = 91)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 41.28% (TP = 61, FP = 155)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 44.46% (TP = 130, FP = 207)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 53.23% (TP = 121, FP = 172)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 6.00% (TP = 14, FP = 114)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 27.02% (TP = 97, FP = 302)

class\_id = 7, name = coca\_cola\_05, ap = 38.02% (TP = 16, FP = 3)

class\_id = 8, name = coca\_cola\_light\_05, ap = 56.14% (TP = 74, FP = 110)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 56.86% (TP = 147, FP = 229)

class\_id = 10, name = tegernseer\_hell\_03, ap = 25.04% (TP = 64, FP = 150)

class\_id = 11, name = corny\_nussvoll, ap = 71.00% (TP = 105, FP = 10)

class\_id = 12, name = corny\_nussvoll\_single, ap = 57.75% (TP = 97, FP = 54)

class\_id = 13, name = corny\_schoko\_banane, ap = 43.57% (TP = 38, FP = 26)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 39.58% (TP = 97, FP = 104)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 46.58% (TP = 39, FP = 1)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 43.49% (TP = 42, FP = 47)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 64.88% (TP = 65, FP = 20)

class\_id = 18, name = caona\_cocoa, ap = 83.10% (TP = 73, FP = 46)

class\_id = 19, name = cocoba\_cocoa, ap = 55.48% (TP = 133, FP = 122)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 71.00% (TP = 80, FP = 18)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 48.76% (TP = 102, FP = 193)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 66.11% (TP = 73, FP = 48)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 54.87% (TP = 93, FP = 88)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 58.89% (TP = 72, FP = 47)

class\_id = 25, name = apple\_golden\_delicious, ap = 21.57% (TP = 78, FP = 377)

class\_id = 26, name = apple\_granny\_smith, ap = 18.04% (TP = 16, FP = 38)

class\_id = 27, name = apple\_red\_boskoop, ap = 48.37% (TP = 95, FP = 83)

class\_id = 28, name = avocado, ap = 80.15% (TP = 94, FP = 19)

class\_id = 29, name = banana\_bundle, ap = 61.33% (TP = 49, FP = 39)

class\_id = 30, name = banana\_single, ap = 31.67% (TP = 42, FP = 23)

class\_id = 31, name = clementine, ap = 60.14% (TP = 69, FP = 39)

class\_id = 32, name = clementine\_single, ap = 29.87% (TP = 116, FP = 108)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 61.40% (TP = 37, FP = 35)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 45.21% (TP = 34, FP = 6)

class\_id = 35, name = kiwi, ap = 41.00% (TP = 63, FP = 53)

class\_id = 36, name = orange\_single, ap = 27.14% (TP = 39, FP = 354)

class\_id = 37, name = oranges, ap = 85.04% (TP = 20, FP = 11)

class\_id = 38, name = pear, ap = 47.25% (TP = 74, FP = 95)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 72.70% (TP = 32, FP = 21)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 69.86% (TP = 96, FP = 20)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 45.47% (TP = 31, FP = 0)

class\_id = 42, name = franken\_tafelreiniger, ap = 36.54% (TP = 98, FP = 87)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 34.99% (TP = 66, FP = 67)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 33.16% (TP = 60, FP = 69)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 21.61% (TP = 19, FP = 17)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 8.73% (TP = 26, FP = 338)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 7.83% (TP = 6, FP = 47)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 49.64% (TP = 81, FP = 111)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 11.81% (TP = 22, FP = 35)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 44.05% (TP = 72, FP = 85)

class\_id = 51, name = cucumber, ap = 34.83% (TP = 27, FP = 2)

class\_id = 52, name = carrot, ap = 36.71% (TP = 79, FP = 122)

class\_id = 53, name = corn\_salad, ap = 72.64% (TP = 71, FP = 43)

class\_id = 54, name = lettuce, ap = 99.96% (TP = 71, FP = 2)

class\_id = 55, name = vine\_tomatoes, ap = 77.19% (TP = 98, FP = 27)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 76.34% (TP = 45, FP = 12)

class\_id = 57, name = rocket, ap = 90.01% (TP = 111, FP = 35)

class\_id = 58, name = salad\_iceberg, ap = 92.26% (TP = 138, FP = 20)

class\_id = 59, name = zucchini, ap = 57.01% (TP = 112, FP = 101)

for conf\_thresh = 0.25, precision = 0.45, recall = 0.53, F1-score = 0.48

for conf\_thresh = 0.25, TP = 4082, FP = 5089, FN = 3647, average IoU = 32.10 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.488061, or 48.81 %

Total Detection Time: 772 Seconds

## **3000**

detections\_count = 47834, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 48.04% (TP = 43, FP = 67)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 27.98% (TP = 31, FP = 73)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 43.18% (TP = 56, FP = 70)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 62.39% (TP = 129, FP = 59)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 58.85% (TP = 115, FP = 101)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 14.39% (TP = 44, FP = 151)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 30.07% (TP = 60, FP = 92)

class\_id = 7, name = coca\_cola\_05, ap = 41.99% (TP = 24, FP = 8)

class\_id = 8, name = coca\_cola\_light\_05, ap = 60.84% (TP = 58, FP = 26)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 74.20% (TP = 144, FP = 103)

class\_id = 10, name = tegernseer\_hell\_03, ap = 39.32% (TP = 56, FP = 130)

class\_id = 11, name = corny\_nussvoll, ap = 79.42% (TP = 118, FP = 26)

class\_id = 12, name = corny\_nussvoll\_single, ap = 63.94% (TP = 101, FP = 35)

class\_id = 13, name = corny\_schoko\_banane, ap = 55.02% (TP = 37, FP = 6)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 49.15% (TP = 93, FP = 56)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 58.49% (TP = 52, FP = 0)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 51.17% (TP = 68, FP = 80)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 69.70% (TP = 60, FP = 14)

class\_id = 18, name = caona\_cocoa, ap = 96.05% (TP = 82, FP = 6)

class\_id = 19, name = cocoba\_cocoa, ap = 68.44% (TP = 143, FP = 25)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 92.48% (TP = 118, FP = 3)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 59.68% (TP = 104, FP = 121)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 85.72% (TP = 102, FP = 23)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 59.12% (TP = 97, FP = 123)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 72.71% (TP = 73, FP = 14)

class\_id = 25, name = apple\_golden\_delicious, ap = 32.74% (TP = 89, FP = 218)

class\_id = 26, name = apple\_granny\_smith, ap = 12.29% (TP = 5, FP = 8)

class\_id = 27, name = apple\_red\_boskoop, ap = 55.62% (TP = 87, FP = 60)

class\_id = 28, name = avocado, ap = 87.29% (TP = 106, FP = 14)

class\_id = 29, name = banana\_bundle, ap = 76.01% (TP = 49, FP = 7)

class\_id = 30, name = banana\_single, ap = 40.72% (TP = 41, FP = 9)

class\_id = 31, name = clementine, ap = 63.24% (TP = 52, FP = 11)

class\_id = 32, name = clementine\_single, ap = 30.97% (TP = 108, FP = 67)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 68.80% (TP = 37, FP = 11)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 40.76% (TP = 30, FP = 0)

class\_id = 35, name = kiwi, ap = 57.51% (TP = 67, FP = 22)

class\_id = 36, name = orange\_single, ap = 34.59% (TP = 41, FP = 176)

class\_id = 37, name = oranges, ap = 80.91% (TP = 20, FP = 15)

class\_id = 38, name = pear, ap = 87.72% (TP = 84, FP = 8)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 92.38% (TP = 35, FP = 22)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 63.35% (TP = 91, FP = 38)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 50.34% (TP = 46, FP = 28)

class\_id = 42, name = franken\_tafelreiniger, ap = 43.73% (TP = 90, FP = 33)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 52.56% (TP = 74, FP = 4)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 36.29% (TP = 58, FP = 24)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 27.31% (TP = 16, FP = 1)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 6.27% (TP = 22, FP = 213)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 13.72% (TP = 7, FP = 4)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 65.33% (TP = 88, FP = 90)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 13.95% (TP = 24, FP = 37)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 39.78% (TP = 60, FP = 65)

class\_id = 51, name = cucumber, ap = 44.38% (TP = 36, FP = 4)

class\_id = 52, name = carrot, ap = 47.10% (TP = 70, FP = 20)

class\_id = 53, name = corn\_salad, ap = 83.26% (TP = 79, FP = 26)

class\_id = 54, name = lettuce, ap = 99.77% (TP = 63, FP = 0)

class\_id = 55, name = vine\_tomatoes, ap = 70.06% (TP = 93, FP = 26)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 84.92% (TP = 57, FP = 12)

class\_id = 57, name = rocket, ap = 87.35% (TP = 110, FP = 30)

class\_id = 58, name = salad\_iceberg, ap = 93.44% (TP = 138, FP = 9)

class\_id = 59, name = zucchini, ap = 52.54% (TP = 72, FP = 18)

for conf\_thresh = 0.25, precision = 0.60, recall = 0.54, F1-score = 0.57

for conf\_thresh = 0.25, TP = 4153, FP = 2742, FN = 3576, average IoU = 45.52 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.566561, or 56.66 %

Total Detection Time: 72 Seconds

## **4000**

detections\_count = 40798, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 41.24% (TP = 33, FP = 41)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 20.22% (TP = 23, FP = 83)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 40.25% (TP = 62, FP = 94)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 68.53% (TP = 137, FP = 71)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 52.09% (TP = 103, FP = 78)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 8.37% (TP = 13, FP = 104)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 49.41% (TP = 119, FP = 178)

class\_id = 7, name = coca\_cola\_05, ap = 41.99% (TP = 19, FP = 1)

class\_id = 8, name = coca\_cola\_light\_05, ap = 62.31% (TP = 62, FP = 26)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 75.76% (TP = 147, FP = 78)

class\_id = 10, name = tegernseer\_hell\_03, ap = 43.60% (TP = 53, FP = 83)

class\_id = 11, name = corny\_nussvoll, ap = 79.40% (TP = 124, FP = 19)

class\_id = 12, name = corny\_nussvoll\_single, ap = 66.53% (TP = 109, FP = 24)

class\_id = 13, name = corny\_schoko\_banane, ap = 55.56% (TP = 36, FP = 2)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 56.73% (TP = 113, FP = 52)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 63.25% (TP = 91, FP = 21)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 67.10% (TP = 62, FP = 32)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 71.85% (TP = 80, FP = 41)

class\_id = 18, name = caona\_cocoa, ap = 96.34% (TP = 85, FP = 27)

class\_id = 19, name = cocoba\_cocoa, ap = 63.13% (TP = 131, FP = 34)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 90.37% (TP = 125, FP = 6)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 58.62% (TP = 91, FP = 52)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 90.56% (TP = 113, FP = 27)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 61.91% (TP = 98, FP = 41)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 70.36% (TP = 74, FP = 7)

class\_id = 25, name = apple\_golden\_delicious, ap = 34.29% (TP = 81, FP = 179)

class\_id = 26, name = apple\_granny\_smith, ap = 13.90% (TP = 2, FP = 14)

class\_id = 27, name = apple\_red\_boskoop, ap = 56.65% (TP = 100, FP = 47)

class\_id = 28, name = avocado, ap = 74.69% (TP = 89, FP = 15)

class\_id = 29, name = banana\_bundle, ap = 67.84% (TP = 42, FP = 13)

class\_id = 30, name = banana\_single, ap = 38.99% (TP = 41, FP = 14)

class\_id = 31, name = clementine, ap = 54.89% (TP = 44, FP = 3)

class\_id = 32, name = clementine\_single, ap = 38.86% (TP = 85, FP = 17)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 70.25% (TP = 45, FP = 18)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 42.39% (TP = 32, FP = 0)

class\_id = 35, name = kiwi, ap = 55.96% (TP = 62, FP = 11)

class\_id = 36, name = orange\_single, ap = 54.14% (TP = 41, FP = 139)

class\_id = 37, name = oranges, ap = 78.24% (TP = 20, FP = 37)

class\_id = 38, name = pear, ap = 85.52% (TP = 79, FP = 7)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 94.07% (TP = 33, FP = 0)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 62.51% (TP = 95, FP = 5)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 47.92% (TP = 39, FP = 11)

class\_id = 42, name = franken\_tafelreiniger, ap = 45.18% (TP = 87, FP = 19)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 50.86% (TP = 75, FP = 24)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 31.74% (TP = 59, FP = 38)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 30.21% (TP = 21, FP = 4)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 4.43% (TP = 19, FP = 209)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 19.28% (TP = 7, FP = 3)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 63.63% (TP = 81, FP = 30)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 14.80% (TP = 21, FP = 31)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 28.49% (TP = 46, FP = 27)

class\_id = 51, name = cucumber, ap = 49.33% (TP = 32, FP = 0)

class\_id = 52, name = carrot, ap = 50.56% (TP = 65, FP = 15)

class\_id = 53, name = corn\_salad, ap = 79.38% (TP = 67, FP = 9)

class\_id = 54, name = lettuce, ap = 100.00% (TP = 71, FP = 0)

class\_id = 55, name = vine\_tomatoes, ap = 48.48% (TP = 78, FP = 49)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 78.38% (TP = 43, FP = 2)

class\_id = 57, name = rocket, ap = 87.38% (TP = 105, FP = 15)

class\_id = 58, name = salad\_iceberg, ap = 85.03% (TP = 132, FP = 25)

class\_id = 59, name = zucchini, ap = 55.37% (TP = 76, FP = 26)

for conf\_thresh = 0.25, precision = 0.64, recall = 0.53, F1-score = 0.58

for conf\_thresh = 0.25, TP = 4118, FP = 2278, FN = 3611, average IoU = 50.35 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.564855, or 56.49 %

Total Detection Time: 73 Seconds

## **5000**

detections\_count = 40977, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 46.17% (TP = 39, FP = 56)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 14.81% (TP = 14, FP = 39)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 47.21% (TP = 61, FP = 62)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 67.77% (TP = 118, FP = 26)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 59.41% (TP = 119, FP = 140)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 18.13% (TP = 45, FP = 186)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 42.20% (TP = 81, FP = 91)

class\_id = 7, name = coca\_cola\_05, ap = 43.54% (TP = 22, FP = 1)

class\_id = 8, name = coca\_cola\_light\_05, ap = 57.20% (TP = 59, FP = 37)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 76.97% (TP = 149, FP = 111)

class\_id = 10, name = tegernseer\_hell\_03, ap = 48.22% (TP = 77, FP = 161)

class\_id = 11, name = corny\_nussvoll, ap = 78.63% (TP = 118, FP = 12)

class\_id = 12, name = corny\_nussvoll\_single, ap = 63.47% (TP = 103, FP = 37)

class\_id = 13, name = corny\_schoko\_banane, ap = 54.03% (TP = 38, FP = 8)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 49.56% (TP = 102, FP = 47)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 58.68% (TP = 56, FP = 5)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 62.63% (TP = 66, FP = 53)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 70.48% (TP = 77, FP = 23)

class\_id = 18, name = caona\_cocoa, ap = 92.33% (TP = 79, FP = 7)

class\_id = 19, name = cocoba\_cocoa, ap = 68.74% (TP = 157, FP = 85)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 86.15% (TP = 104, FP = 2)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 56.52% (TP = 93, FP = 127)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 76.63% (TP = 95, FP = 49)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 60.50% (TP = 99, FP = 75)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 70.35% (TP = 71, FP = 7)

class\_id = 25, name = apple\_golden\_delicious, ap = 35.38% (TP = 82, FP = 183)

class\_id = 26, name = apple\_granny\_smith, ap = 9.40% (TP = 1, FP = 22)

class\_id = 27, name = apple\_red\_boskoop, ap = 62.69% (TP = 100, FP = 38)

class\_id = 28, name = avocado, ap = 77.00% (TP = 88, FP = 15)

class\_id = 29, name = banana\_bundle, ap = 70.68% (TP = 42, FP = 5)

class\_id = 30, name = banana\_single, ap = 40.73% (TP = 42, FP = 9)

class\_id = 31, name = clementine, ap = 49.08% (TP = 40, FP = 11)

class\_id = 32, name = clementine\_single, ap = 35.08% (TP = 76, FP = 28)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 76.19% (TP = 33, FP = 0)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 45.34% (TP = 33, FP = 0)

class\_id = 35, name = kiwi, ap = 48.46% (TP = 62, FP = 23)

class\_id = 36, name = orange\_single, ap = 52.89% (TP = 39, FP = 117)

class\_id = 37, name = oranges, ap = 72.76% (TP = 18, FP = 10)

class\_id = 38, name = pear, ap = 80.05% (TP = 70, FP = 2)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 95.81% (TP = 36, FP = 2)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 65.09% (TP = 96, FP = 19)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 59.14% (TP = 48, FP = 5)

class\_id = 42, name = franken\_tafelreiniger, ap = 45.93% (TP = 93, FP = 15)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 47.29% (TP = 65, FP = 11)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 40.66% (TP = 70, FP = 59)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 22.77% (TP = 10, FP = 4)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 6.43% (TP = 26, FP = 281)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 6.99% (TP = 5, FP = 7)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 67.06% (TP = 87, FP = 70)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 8.18% (TP = 16, FP = 33)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 47.74% (TP = 64, FP = 38)

class\_id = 51, name = cucumber, ap = 43.70% (TP = 34, FP = 0)

class\_id = 52, name = carrot, ap = 49.70% (TP = 63, FP = 20)

class\_id = 53, name = corn\_salad, ap = 79.63% (TP = 59, FP = 0)

class\_id = 54, name = lettuce, ap = 99.98% (TP = 70, FP = 0)

class\_id = 55, name = vine\_tomatoes, ap = 64.90% (TP = 92, FP = 20)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 89.64% (TP = 53, FP = 4)

class\_id = 57, name = rocket, ap = 86.69% (TP = 109, FP = 39)

class\_id = 58, name = salad\_iceberg, ap = 90.79% (TP = 130, FP = 11)

class\_id = 59, name = zucchini, ap = 58.60% (TP = 80, FP = 23)

for conf\_thresh = 0.25, precision = 0.61, recall = 0.53, F1-score = 0.57

for conf\_thresh = 0.25, TP = 4074, FP = 2571, FN = 3655, average IoU = 48.77 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.567131, or 56.71 %

Total Detection Time: 73 Seconds

## **6000**

detections\_count = 39186, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 42.53% (TP = 32, FP = 19)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 20.20% (TP = 28, FP = 72)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 46.42% (TP = 71, FP = 124)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 74.34% (TP = 122, FP = 8)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 67.10% (TP = 148, FP = 239)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 17.52% (TP = 38, FP = 140)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 42.90% (TP = 88, FP = 107)

class\_id = 7, name = coca\_cola\_05, ap = 47.08% (TP = 27, FP = 3)

class\_id = 8, name = coca\_cola\_light\_05, ap = 70.33% (TP = 85, FP = 71)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 76.97% (TP = 146, FP = 68)

class\_id = 10, name = tegernseer\_hell\_03, ap = 62.81% (TP = 71, FP = 72)

class\_id = 11, name = corny\_nussvoll, ap = 78.44% (TP = 117, FP = 9)

class\_id = 12, name = corny\_nussvoll\_single, ap = 70.28% (TP = 112, FP = 26)

class\_id = 13, name = corny\_schoko\_banane, ap = 57.21% (TP = 42, FP = 17)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 47.58% (TP = 94, FP = 54)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 60.81% (TP = 89, FP = 13)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 68.51% (TP = 68, FP = 34)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 74.76% (TP = 80, FP = 17)

class\_id = 18, name = caona\_cocoa, ap = 95.99% (TP = 82, FP = 16)

class\_id = 19, name = cocoba\_cocoa, ap = 67.27% (TP = 140, FP = 26)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 84.62% (TP = 96, FP = 5)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 66.11% (TP = 106, FP = 85)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 79.52% (TP = 91, FP = 13)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 58.31% (TP = 95, FP = 58)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 72.78% (TP = 72, FP = 8)

class\_id = 25, name = apple\_golden\_delicious, ap = 29.33% (TP = 70, FP = 146)

class\_id = 26, name = apple\_granny\_smith, ap = 18.34% (TP = 19, FP = 56)

class\_id = 27, name = apple\_red\_boskoop, ap = 61.81% (TP = 138, FP = 81)

class\_id = 28, name = avocado, ap = 84.71% (TP = 111, FP = 39)

class\_id = 29, name = banana\_bundle, ap = 72.79% (TP = 44, FP = 2)

class\_id = 30, name = banana\_single, ap = 40.78% (TP = 42, FP = 4)

class\_id = 31, name = clementine, ap = 49.32% (TP = 42, FP = 21)

class\_id = 32, name = clementine\_single, ap = 43.44% (TP = 107, FP = 6)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 74.29% (TP = 45, FP = 5)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 48.42% (TP = 33, FP = 0)

class\_id = 35, name = kiwi, ap = 63.33% (TP = 71, FP = 4)

class\_id = 36, name = orange\_single, ap = 53.93% (TP = 41, FP = 88)

class\_id = 37, name = oranges, ap = 74.13% (TP = 18, FP = 13)

class\_id = 38, name = pear, ap = 83.33% (TP = 85, FP = 1)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 90.37% (TP = 34, FP = 25)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 61.30% (TP = 94, FP = 17)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 53.23% (TP = 49, FP = 44)

class\_id = 42, name = franken\_tafelreiniger, ap = 52.98% (TP = 104, FP = 24)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 53.48% (TP = 80, FP = 35)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 45.63% (TP = 72, FP = 24)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 29.76% (TP = 27, FP = 15)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 5.61% (TP = 23, FP = 154)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 9.60% (TP = 5, FP = 6)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 68.78% (TP = 85, FP = 12)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 15.14% (TP = 21, FP = 25)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 36.47% (TP = 44, FP = 14)

class\_id = 51, name = cucumber, ap = 42.72% (TP = 35, FP = 0)

class\_id = 52, name = carrot, ap = 53.57% (TP = 73, FP = 29)

class\_id = 53, name = corn\_salad, ap = 78.33% (TP = 67, FP = 8)

class\_id = 54, name = lettuce, ap = 100.00% (TP = 71, FP = 3)

class\_id = 55, name = vine\_tomatoes, ap = 64.53% (TP = 87, FP = 11)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 83.64% (TP = 46, FP = 11)

class\_id = 57, name = rocket, ap = 87.26% (TP = 102, FP = 10)

class\_id = 58, name = salad\_iceberg, ap = 95.42% (TP = 146, FP = 2)

class\_id = 59, name = zucchini, ap = 61.58% (TP = 94, FP = 57)

for conf\_thresh = 0.25, precision = 0.66, recall = 0.56, F1-score = 0.61

for conf\_thresh = 0.25, TP = 4365, FP = 2296, FN = 3364, average IoU = 52.54 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.589619, or 58.96 %

Total Detection Time: 73 Seconds

## **7000**

detections\_count = 38822, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 38.98% (TP = 19, FP = 14)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 19.10% (TP = 23, FP = 57)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 50.19% (TP = 76, FP = 101)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 72.49% (TP = 138, FP = 52)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 69.13% (TP = 133, FP = 147)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 7.89% (TP = 10, FP = 99)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 55.17% (TP = 147, FP = 221)

class\_id = 7, name = coca\_cola\_05, ap = 49.23% (TP = 26, FP = 4)

class\_id = 8, name = coca\_cola\_light\_05, ap = 72.88% (TP = 102, FP = 126)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 79.37% (TP = 154, FP = 113)

class\_id = 10, name = tegernseer\_hell\_03, ap = 63.69% (TP = 69, FP = 51)

class\_id = 11, name = corny\_nussvoll, ap = 79.16% (TP = 110, FP = 6)

class\_id = 12, name = corny\_nussvoll\_single, ap = 69.51% (TP = 112, FP = 30)

class\_id = 13, name = corny\_schoko\_banane, ap = 57.74% (TP = 42, FP = 6)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 55.25% (TP = 115, FP = 54)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 70.35% (TP = 102, FP = 13)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 75.63% (TP = 64, FP = 16)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 74.94% (TP = 82, FP = 37)

class\_id = 18, name = caona\_cocoa, ap = 98.10% (TP = 86, FP = 9)

class\_id = 19, name = cocoba\_cocoa, ap = 73.63% (TP = 154, FP = 19)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 87.55% (TP = 108, FP = 2)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 65.10% (TP = 109, FP = 113)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 81.86% (TP = 95, FP = 16)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 57.51% (TP = 92, FP = 36)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 76.69% (TP = 81, FP = 9)

class\_id = 25, name = apple\_golden\_delicious, ap = 32.47% (TP = 76, FP = 153)

class\_id = 26, name = apple\_granny\_smith, ap = 26.94% (TP = 1, FP = 7)

class\_id = 27, name = apple\_red\_boskoop, ap = 55.84% (TP = 107, FP = 53)

class\_id = 28, name = avocado, ap = 77.72% (TP = 92, FP = 31)

class\_id = 29, name = banana\_bundle, ap = 77.43% (TP = 41, FP = 3)

class\_id = 30, name = banana\_single, ap = 39.00% (TP = 42, FP = 28)

class\_id = 31, name = clementine, ap = 60.08% (TP = 57, FP = 26)

class\_id = 32, name = clementine\_single, ap = 42.82% (TP = 99, FP = 21)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 75.97% (TP = 45, FP = 7)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 63.21% (TP = 46, FP = 1)

class\_id = 35, name = kiwi, ap = 63.33% (TP = 70, FP = 4)

class\_id = 36, name = orange\_single, ap = 51.97% (TP = 40, FP = 128)

class\_id = 37, name = oranges, ap = 71.88% (TP = 18, FP = 14)

class\_id = 38, name = pear, ap = 81.97% (TP = 82, FP = 7)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 99.74% (TP = 38, FP = 3)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 73.69% (TP = 112, FP = 38)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 69.77% (TP = 60, FP = 13)

class\_id = 42, name = franken\_tafelreiniger, ap = 51.36% (TP = 97, FP = 11)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 54.21% (TP = 77, FP = 20)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 45.07% (TP = 79, FP = 43)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 25.27% (TP = 14, FP = 11)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 5.92% (TP = 23, FP = 240)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 9.78% (TP = 6, FP = 13)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 69.35% (TP = 87, FP = 21)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 14.58% (TP = 22, FP = 27)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 50.58% (TP = 62, FP = 17)

class\_id = 51, name = cucumber, ap = 49.17% (TP = 35, FP = 3)

class\_id = 52, name = carrot, ap = 54.45% (TP = 72, FP = 17)

class\_id = 53, name = corn\_salad, ap = 89.33% (TP = 69, FP = 1)

class\_id = 54, name = lettuce, ap = 100.00% (TP = 71, FP = 0)

class\_id = 55, name = vine\_tomatoes, ap = 68.95% (TP = 90, FP = 7)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 94.87% (TP = 57, FP = 6)

class\_id = 57, name = rocket, ap = 87.32% (TP = 104, FP = 14)

class\_id = 58, name = salad\_iceberg, ap = 95.99% (TP = 148, FP = 1)

class\_id = 59, name = zucchini, ap = 69.30% (TP = 111, FP = 32)

for conf\_thresh = 0.25, precision = 0.65, recall = 0.58, F1-score = 0.62

for conf\_thresh = 0.25, TP = 4499, FP = 2372, FN = 3230, average IoU = 53.75 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.616738, or 61.67 %

Total Detection Time: 73 Seconds

## **8000**

detections\_count = 32841, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 38.02% (TP = 22, FP = 7)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 24.29% (TP = 28, FP = 45)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 47.92% (TP = 70, FP = 71)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 75.20% (TP = 135, FP = 23)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 59.58% (TP = 107, FP = 89)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 13.80% (TP = 39, FP = 164)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 49.90% (TP = 87, FP = 80)

class\_id = 7, name = coca\_cola\_05, ap = 42.32% (TP = 19, FP = 2)

class\_id = 8, name = coca\_cola\_light\_05, ap = 71.90% (TP = 87, FP = 82)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 80.14% (TP = 160, FP = 164)

class\_id = 10, name = tegernseer\_hell\_03, ap = 61.42% (TP = 69, FP = 42)

class\_id = 11, name = corny\_nussvoll, ap = 83.22% (TP = 123, FP = 13)

class\_id = 12, name = corny\_nussvoll\_single, ap = 68.25% (TP = 103, FP = 25)

class\_id = 13, name = corny\_schoko\_banane, ap = 47.98% (TP = 36, FP = 11)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 49.37% (TP = 93, FP = 30)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 73.80% (TP = 118, FP = 17)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 65.55% (TP = 60, FP = 31)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 75.53% (TP = 83, FP = 35)

class\_id = 18, name = caona\_cocoa, ap = 97.29% (TP = 82, FP = 3)

class\_id = 19, name = cocoba\_cocoa, ap = 71.38% (TP = 140, FP = 9)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 81.83% (TP = 98, FP = 0)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 61.72% (TP = 102, FP = 83)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 84.56% (TP = 104, FP = 31)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 64.13% (TP = 96, FP = 12)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 68.64% (TP = 71, FP = 7)

class\_id = 25, name = apple\_golden\_delicious, ap = 31.17% (TP = 82, FP = 165)

class\_id = 26, name = apple\_granny\_smith, ap = 21.47% (TP = 6, FP = 11)

class\_id = 27, name = apple\_red\_boskoop, ap = 52.34% (TP = 66, FP = 31)

class\_id = 28, name = avocado, ap = 73.07% (TP = 84, FP = 17)

class\_id = 29, name = banana\_bundle, ap = 73.62% (TP = 41, FP = 1)

class\_id = 30, name = banana\_single, ap = 40.28% (TP = 42, FP = 9)

class\_id = 31, name = clementine, ap = 50.04% (TP = 45, FP = 15)

class\_id = 32, name = clementine\_single, ap = 39.56% (TP = 88, FP = 10)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 75.78% (TP = 43, FP = 2)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 43.75% (TP = 33, FP = 0)

class\_id = 35, name = kiwi, ap = 58.40% (TP = 64, FP = 2)

class\_id = 36, name = orange\_single, ap = 47.58% (TP = 37, FP = 118)

class\_id = 37, name = oranges, ap = 68.19% (TP = 17, FP = 12)

class\_id = 38, name = pear, ap = 71.29% (TP = 68, FP = 6)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 98.17% (TP = 37, FP = 1)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 69.07% (TP = 102, FP = 8)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 66.84% (TP = 62, FP = 12)

class\_id = 42, name = franken\_tafelreiniger, ap = 53.93% (TP = 112, FP = 32)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 48.11% (TP = 69, FP = 29)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 47.59% (TP = 78, FP = 53)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 27.72% (TP = 30, FP = 25)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 3.83% (TP = 18, FP = 190)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 8.99% (TP = 3, FP = 15)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 66.51% (TP = 85, FP = 29)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 12.13% (TP = 16, FP = 23)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 38.91% (TP = 44, FP = 8)

class\_id = 51, name = cucumber, ap = 46.32% (TP = 33, FP = 0)

class\_id = 52, name = carrot, ap = 49.68% (TP = 67, FP = 11)

class\_id = 53, name = corn\_salad, ap = 82.11% (TP = 64, FP = 2)

class\_id = 54, name = lettuce, ap = 99.87% (TP = 70, FP = 1)

class\_id = 55, name = vine\_tomatoes, ap = 66.63% (TP = 87, FP = 8)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 86.30% (TP = 53, FP = 8)

class\_id = 57, name = rocket, ap = 86.79% (TP = 104, FP = 18)

class\_id = 58, name = salad\_iceberg, ap = 94.75% (TP = 144, FP = 1)

class\_id = 59, name = zucchini, ap = 66.39% (TP = 79, FP = 7)

for conf\_thresh = 0.25, precision = 0.68, recall = 0.54, F1-score = 0.61

for conf\_thresh = 0.25, TP = 4205, FP = 1956, FN = 3524, average IoU = 56.48 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.587486, or 58.75 %

Total Detection Time: 74 Seconds

## **9000**

detections\_count = 35085, unique\_truth\_count = 7729

class\_id = 0, name = adelholzener\_alpenquelle\_classic\_075, ap = 46.72% (TP = 36, FP = 22)

class\_id = 1, name = adelholzener\_alpenquelle\_naturell\_075, ap = 23.06% (TP = 17, FP = 28)

class\_id = 2, name = adelholzener\_classic\_bio\_apfelschorle\_02, ap = 48.22% (TP = 70, FP = 158)

class\_id = 3, name = adelholzener\_classic\_naturell\_02, ap = 68.41% (TP = 122, FP = 38)

class\_id = 4, name = adelholzener\_gourmet\_mineralwasser\_02, ap = 63.67% (TP = 120, FP = 91)

class\_id = 5, name = augustiner\_lagerbraeu\_hell\_05, ap = 13.91% (TP = 30, FP = 137)

class\_id = 6, name = augustiner\_weissbier\_05, ap = 44.63% (TP = 91, FP = 172)

class\_id = 7, name = coca\_cola\_05, ap = 46.28% (TP = 26, FP = 5)

class\_id = 8, name = coca\_cola\_light\_05, ap = 60.86% (TP = 62, FP = 34)

class\_id = 9, name = suntory\_gokuri\_lemonade, ap = 74.96% (TP = 147, FP = 100)

class\_id = 10, name = tegernseer\_hell\_03, ap = 57.11% (TP = 66, FP = 83)

class\_id = 11, name = corny\_nussvoll, ap = 85.41% (TP = 128, FP = 5)

class\_id = 12, name = corny\_nussvoll\_single, ap = 67.50% (TP = 109, FP = 30)

class\_id = 13, name = corny\_schoko\_banane, ap = 50.59% (TP = 35, FP = 10)

class\_id = 14, name = corny\_schoko\_banane\_single, ap = 53.02% (TP = 108, FP = 31)

class\_id = 15, name = dr\_oetker\_vitalis\_knuspermuesli\_klassisch, ap = 67.89% (TP = 104, FP = 16)

class\_id = 16, name = koelln\_muesli\_fruechte, ap = 64.33% (TP = 62, FP = 46)

class\_id = 17, name = koelln\_muesli\_schoko, ap = 73.81% (TP = 77, FP = 20)

class\_id = 18, name = caona\_cocoa, ap = 95.05% (TP = 83, FP = 26)

class\_id = 19, name = cocoba\_cocoa, ap = 70.73% (TP = 146, FP = 19)

class\_id = 20, name = cafe\_wunderbar\_espresso, ap = 80.46% (TP = 97, FP = 1)

class\_id = 21, name = douwe\_egberts\_professional\_ground\_coffee, ap = 65.85% (TP = 122, FP = 159)

class\_id = 22, name = gepa\_bio\_caffe\_crema, ap = 78.88% (TP = 91, FP = 27)

class\_id = 23, name = gepa\_italienischer\_bio\_espresso, ap = 59.70% (TP = 90, FP = 25)

class\_id = 24, name = apple\_braeburn\_bundle, ap = 74.51% (TP = 73, FP = 3)

class\_id = 25, name = apple\_golden\_delicious, ap = 31.31% (TP = 85, FP = 185)

class\_id = 26, name = apple\_granny\_smith, ap = 16.42% (TP = 3, FP = 6)

class\_id = 27, name = apple\_red\_boskoop, ap = 44.12% (TP = 43, FP = 20)

class\_id = 28, name = avocado, ap = 73.30% (TP = 86, FP = 13)

class\_id = 29, name = banana\_bundle, ap = 72.10% (TP = 43, FP = 5)

class\_id = 30, name = banana\_single, ap = 40.75% (TP = 42, FP = 2)

class\_id = 31, name = clementine, ap = 58.96% (TP = 54, FP = 36)

class\_id = 32, name = clementine\_single, ap = 37.50% (TP = 94, FP = 11)

class\_id = 33, name = grapes\_green\_sugraone\_seedless, ap = 73.49% (TP = 43, FP = 2)

class\_id = 34, name = grapes\_sweet\_celebration\_seedless, ap = 43.05% (TP = 31, FP = 3)

class\_id = 35, name = kiwi, ap = 54.69% (TP = 63, FP = 0)

class\_id = 36, name = orange\_single, ap = 48.44% (TP = 37, FP = 97)

class\_id = 37, name = oranges, ap = 74.58% (TP = 17, FP = 1)

class\_id = 38, name = pear, ap = 77.92% (TP = 74, FP = 3)

class\_id = 39, name = pasta\_reggia\_elicoidali, ap = 94.17% (TP = 35, FP = 6)

class\_id = 40, name = pasta\_reggia\_fusilli, ap = 72.10% (TP = 104, FP = 16)

class\_id = 41, name = pasta\_reggia\_spaghetti, ap = 65.76% (TP = 60, FP = 16)

class\_id = 42, name = franken\_tafelreiniger, ap = 55.33% (TP = 108, FP = 23)

class\_id = 43, name = pelikan\_tintenpatrone\_canon, ap = 53.90% (TP = 78, FP = 15)

class\_id = 44, name = ethiquable\_gruener\_tee\_ceylon, ap = 46.39% (TP = 80, FP = 60)

class\_id = 45, name = gepa\_bio\_und\_fair\_fencheltee, ap = 25.57% (TP = 11, FP = 1)

class\_id = 46, name = gepa\_bio\_und\_fair\_kamillentee, ap = 6.42% (TP = 25, FP = 201)

class\_id = 47, name = gepa\_bio\_und\_fair\_kraeuterteemischung, ap = 5.25% (TP = 0, FP = 0)

class\_id = 48, name = gepa\_bio\_und\_fair\_pfefferminztee, ap = 67.81% (TP = 86, FP = 27)

class\_id = 49, name = gepa\_bio\_und\_fair\_rooibostee, ap = 13.92% (TP = 26, FP = 61)

class\_id = 50, name = kilimanjaro\_tea\_earl\_grey, ap = 49.59% (TP = 56, FP = 3)

class\_id = 51, name = cucumber, ap = 47.19% (TP = 31, FP = 0)

class\_id = 52, name = carrot, ap = 46.59% (TP = 61, FP = 6)

class\_id = 53, name = corn\_salad, ap = 84.47% (TP = 76, FP = 7)

class\_id = 54, name = lettuce, ap = 99.85% (TP = 70, FP = 1)

class\_id = 55, name = vine\_tomatoes, ap = 71.03% (TP = 95, FP = 12)

class\_id = 56, name = roma\_vine\_tomatoes, ap = 83.36% (TP = 46, FP = 1)

class\_id = 57, name = rocket, ap = 91.78% (TP = 108, FP = 8)

class\_id = 58, name = salad\_iceberg, ap = 96.63% (TP = 149, FP = 4)

class\_id = 59, name = zucchini, ap = 63.21% (TP = 90, FP = 27)

for conf\_thresh = 0.25, precision = 0.66, recall = 0.55, F1-score = 0.60

for conf\_thresh = 0.25, TP = 4222, FP = 2165, FN = 3507, average IoU = 54.54 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall

mean average precision (mAP@0.50) = 0.587088, or 58.71 %

Total Detection Time: 72 Seconds