# Method1:SIFT

This method adopts SIFT as the image feature extract algorithm.

Workflow: This method first crops the query image, then use SIFT to extract the feature for each query image and each gallery image. Then use the description to do FLANN match, also define that these with 0.01\*n.distance<m.distance<0.8\*n.distance as a good match, then sort these gallery images by the good matches number.

Rank list:

Q1: 3457 448 2699 4957 2242 5006 4511 1994 2363 926

Q2: 86 930 3544 1238 2082 1860 4249 4523 1192 630

Q3: 3113 448 1592 3399 2684 4336 4481 8 1239 2663

Q4: 2575 1323 2656 2427 4456 1799 4918 2473 173 448

Q5: 2403 4937 448 4371 1159 3483 2309 2699 4876 3689

Q6: 2003 934 1227 839 991 2490 3875 448 2828 2309

Q7: 2857 3005 2683 79 2726 2402 2701 1603 3628 2444

Q8: 770 3660 4277 1295 426 4346 1524 4986 841 448

Q9: 2666 448 4868 1750 2699 241 3596 4991 2309 4190

Q10: 4018 139 1496 2775 2401 2252 4614 76 4709 2127

Q11: 1044 4386 448 2870 3791 1352 3068 3362 2790 1055

Q12: 4256 3188 3268 670 2966 585 4552 2293 84 3908

Q13: 3331 990 3493 584 3370 4569 739 4228 4576 1954

Q14: 4325 3166 810 716 448 291 2859 4978 3481 4823

Q15: 1038 1368 241 1806 3985 25 929 2979 791 4811

Q16: 456 1974 111 1039 2886 2416 734 1674 1119 1922

Q17: 2 448 1403 4190 1438 2989 2722 2198 2117 4482

Q18: 1276 1164 649 623 116 4792 1710 448 862 756

Q19: 4286 4332 1884 1784 518 1459 4170 2807 1028 4184

Q20: 3259 672 1876 2389 4127 4493 448 2514 3123 3135

# Method2:ColorHistogram

This method adopts color histogram as the image feature extract algorithm.

Workflow: This method first crops the query image, then use color histogram to extract the feature for each query image and each gallery image with a side window. Then use the histogram to calculate the distance with other histogram of the gallery images, keep the smallest distance of different window positions as the result of this pair, then sort these gallery images by the distance.

Rank list:

Q1: 3457 4978 708 2821 3047 290 395 4724 952 4377

Q2: 86 3791 4824 1333 4819 4982 2504 675 4202 4476

Q3: 3113 1514 3105 596 3144 2339 1060 771 4194 3566

Q4: 2575 1183 3614 4533 193 1048 506 51 414 3694

Q5: 4937 2403 3604 180 591 3554 4900 4371 1860 3157

Q6: 2003 759 159 531 3372 4582 196 4724 3404 2442

Q7: 2857 4382 4725 2402 1603 208 4053 4770 4271 2101

Q8: 770 3909 1531 2564 1966 1168 1721 1844 488 4703

Q9: 2666 1301 2838 3355 3835 399 1949 4280 968 1653

Q10: 4018 284 1087 833 310 2841 4940 2671 647 3509

Q11: 1044 3362 3791 3799 4703 1402 2018 302 1390 3886

Q12: 4256 1130 3052 1852 2018 3957 3243 4259 1007 4139

Q13: 3331 871 3493 399 4698 1156 3800 317 2778 400

Q14: 4325 1168 1278 4703 2452 3792 4446 4424 3911 4784

Q15: 1038 4543 1146 3651 3527 4167 2757 1 2838 1891

Q16: 456 3941 3916 140 4308 4395 513 2506 402 809

Q17: 2 961 2896 4868 384 398 1367 4403 1690 328

Q18: 1276 15 1618 1263 881 3556 1201 3806 3985 1068

Q19: 4286 1001 924 2117 283 4478 1863 1505 2524 2293

Q20: 3259 4127 2389 2840 322 1553 4813 1876 4626 4836

# Method3:ColorMatrix(self-implement)

This method adopt color matrix as the image feature extract algorithm.

Workflow: this progress is almost the same of color histogram, but the color matrix and calculate distance algorithm is implement by myself.

Rank list:

Q1: 2410 1952 345 1764 4100 3643 3207 295 4232 4944

Q2: 21 1683 4327 4023 3968 2671 303 3133 1860 3976

Q3: 2060 3282 1326 1282 2088 1848 1528 1772 2569 823

Q4: 3252 2748 1215 2921 3755 2019 2285 4056 437 2520

Q5: 2403 2368 402 1760 4937 3780 4734 3065 396 3838

Q6: 3553 4751 1337 53 3396 4875 2027 26 193 1282

Q7: 3067 79 2857 4009 2723 4214 3154 4577 380 1328

Q8: 3423 1237 1960 1824 3681 326 18 1641 4044 2803

Q9: 1212 1287 1054 2666 2718 4878 3472 797 3739 2120

Q10: 3975 4920 877 3744 1161 4241 4883 3259 3169 613

Q11: 819 3421 1478 2695 199 3838 3827 4430 4105 3350

Q12: 4113 1525 2384 1988 4056 3780 353 4788 570 4476

Q13: 1531 3181 1487 3487 1553 2384 2224 2535 1941 4758

Q14: 3147 4325 15 412 934 2991 585 4693 1642 4090

Q15: 1038 3394 3008 2194 2514 3528 1840 3064 4700 2043

Q16: 4513 4665 1628 3333 1408 2770 3872 1795 3449 4776

Q17: 3369 2296 2 1412 4370 1548 1913 753 4359 2706

Q18: 1453 1719 3701 4069 106 1907 4955 99 1152 102

Q19: 4036 2807 3168 3318 4827 221 435 1180 1505 1541

Q20: 3674 1252 4021 3465 2563 1145 2322 933 2507 292

# Method4:SIFT+ColorHistogram (best)

This method adopt SIFT and color histogram together.

Workflow: This method first crop the query image, then use color histogram with a slide window to find the slide window position which is the smallest distance in color histogram. Then calculate the SIFT feature of these two images, and use as a result. Then sort by distance = (1-color distance)\*(good matches from SIFT). The connect of two methods get a better result.

Rank list:

Q1: 3457 4125 866 4114 3488 1227 810 448 3540 4851

Q2: 86 4249 1860 1192 3544 1238 930 4523 2082 630

Q3: 3113 3399 2684 3697 1592 4631 1663 2443 230 1200

Q4: 2575 2656 1323 2427 4456 1799 1492 4918 2473 4811

Q5: 2403 4937 1159 4371 3689 4516 2704 1187 4236 2063

Q6: 2003 839 934 2490 1227 3875 991 2828 3483 1777

Q7: 2857 79 2402 3005 2683 1603 2726 2701 2444 3628

Q8: 770 3660 4277 1295 426 4346 1524 4762 2123 841

Q9: 2666 448 1750 1117 2458 4190 3086 1625 1997 4060

Q10: 4018 139 647 67 1272 1482 1699 4002 4819 1696

Q11: 1044 4386 3791 2870 3362 3068 3127 1405 2708 4425

Q12: 4256 1130 670 2399 3268 263 2504 3886 803 2966

Q13: 3331 3493 584 990 3370 4228 4576 4569 1954 739

Q14: 4325 3166 291 810 2859 716 4978 4282 3481 3606

Q15: 1038 1892 3209 241 4745 374 4516 3236 1146 584

Q16: 456 1025 1102 2834 4326 3590 3856 502 4479 793

Q17: 2 448 2896 2460 2852 4432 1037 3616 1818 386

Q18: 1276 623 116 1164 1710 649 756 862 4792 3556

Q19: 4286 2807 1884 1784 4332 518 1459 4170 1028 4184

Q20: 3259 1876 2389 4127 672 4813 2469 4626 20 3703