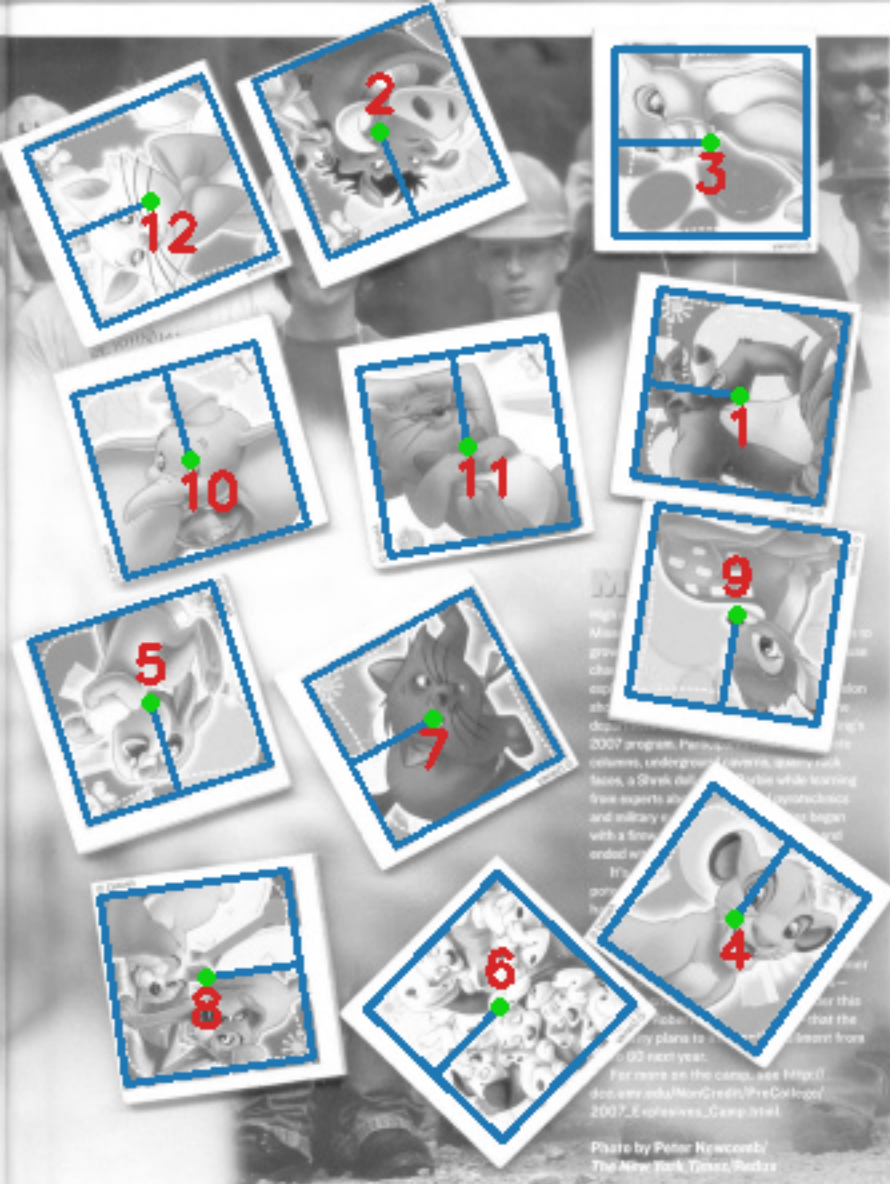


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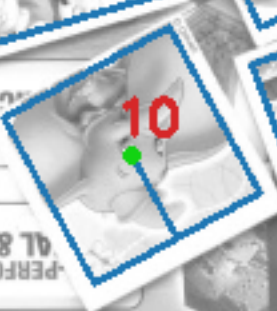


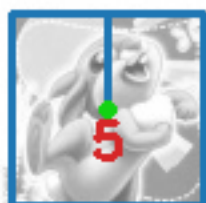
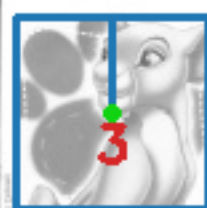
high school students. The program, which runs from 2007 to 2010, is a joint effort between the IEEE and the IEEE Computer Society. The program is designed to provide students with a hands-on experience in the field of computer science and engineering. The program is open to students who are currently in high school and who are interested in pursuing a career in computer science or engineering. The program is a great way for students to gain experience in the field and to meet with professionals in the industry. The program is a great way for students to learn about the field and to see if it is something they want to pursue. The program is a great way for students to gain experience in the field and to meet with professionals in the industry. The program is a great way for students to learn about the field and to see if it is something they want to pursue.

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For more on the camp, see [http://www.ieee.org/NonCredit/PreCollege/2007/Experiences\\_Camp.html](http://www.ieee.org/NonCredit/PreCollege/2007/Experiences_Camp.html).

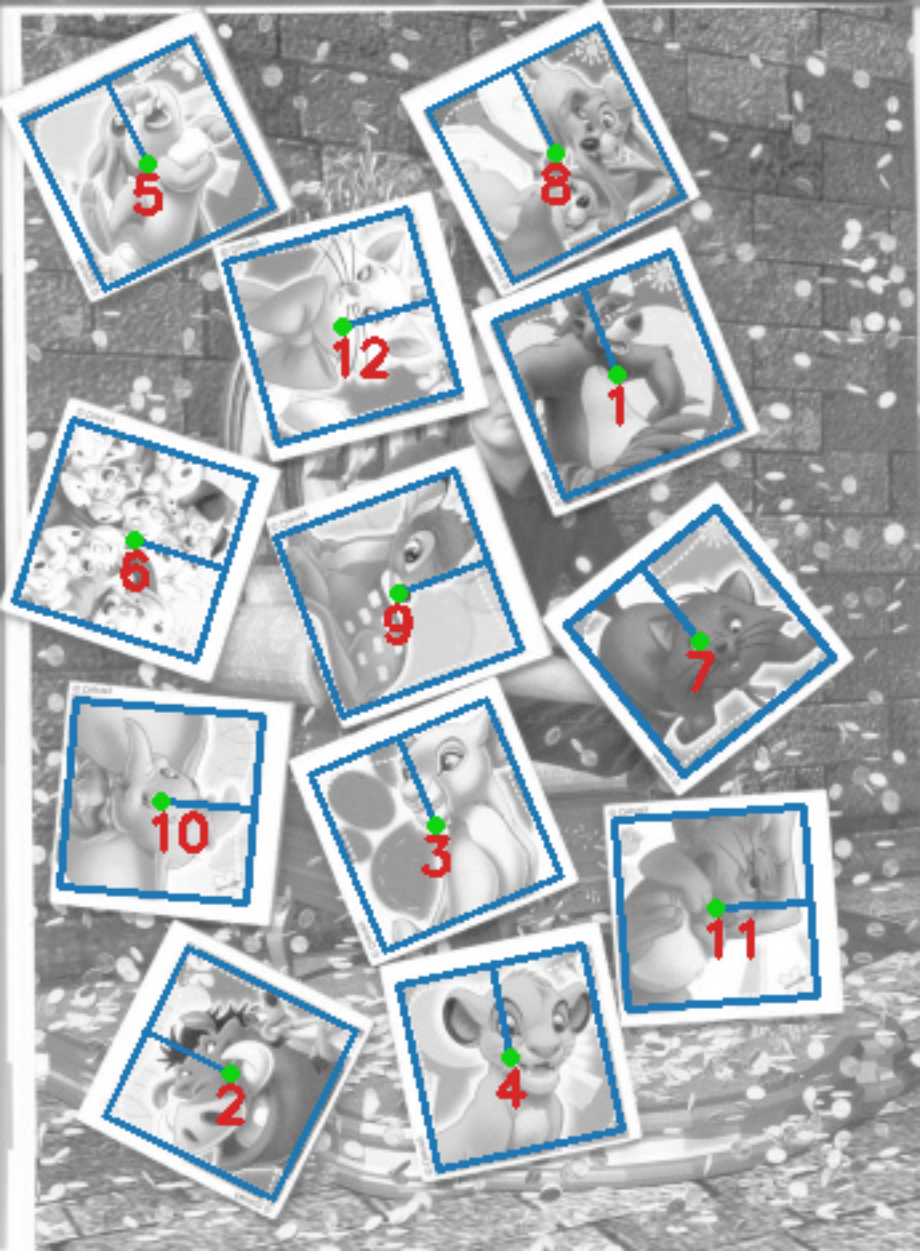
Photo by Peter Newcomb/  
The New York Times/Redux













```
time make p=ex2
g++ -std=gnu++14 ex2.cpp -o ex2 -fmax-errors=2 `pkg-config opencv4 --libs --
cflags` -O3 -s
./ex2
```

Image: tmatch\_extra/a1.jpg

Query: 1	Best Score: 0.976254	at [55, 153]	Best Angle: 357
Query: 2	Best Score: 0.973631	at [289, 105]	Best Angle: 303
Query: 3	Best Score: 0.948959	at [56, 233]	Best Angle: 177
Query: 4	Best Score: 0.943956	at [295, 358]	Best Angle: 54
Query: 5	Best Score: 0.969668	at [154, 196]	Best Angle: 15
Query: 6	Best Score: 0.934465	at [294, 206]	Best Angle: 126
Query: 7	Best Score: 0.977245	at [194, 63]	Best Angle: 261
Query: 8	Best Score: 0.942998	at [215, 409]	Best Angle: 217
Query: 9	Best Score: 0.962695	at [65, 50]	Best Angle: 153
Query: 10	Best Score: 0.957653	at [77, 420]	Best Angle: 73
Query: 11	Best Score: 0.977507	at [74, 332]	Best Angle: 343
Query: 12	Best Score: 0.927088	at [181, 314]	Best Angle: 300

Image: tmatch\_extra/a2.jpg

Query: 1	Best Score: 0.999195	at [42, 42]	Best Angle: 0
Query: 2	Best Score: 0.999265	at [125, 44]	Best Angle: 0
Query: 3	Best Score: 0.99894	at [210, 42]	Best Angle: 0
Query: 4	Best Score: 0.998101	at [40, 126]	Best Angle: 0
Query: 5	Best Score: 0.998597	at [124, 128]	Best Angle: 0
Query: 6	Best Score: 0.999111	at [211, 125]	Best Angle: 0
Query: 7	Best Score: 0.999198	at [40, 210]	Best Angle: 0
Query: 8	Best Score: 0.999012	at [125, 212]	Best Angle: 0
Query: 9	Best Score: 0.998748	at [212, 212]	Best Angle: 0
Query: 10	Best Score: 0.998515	at [39, 296]	Best Angle: 0
Query: 11	Best Score: 0.999253	at [126, 296]	Best Angle: 0
Query: 12	Best Score: 0.998394	at [211, 295]	Best Angle: 0

Image: tmatch\_extra/a3.jpg

Query: 1	Best Score: 0.977262	at [276, 64]	Best Angle: 57
Query: 2	Best Score: 0.956555	at [250, 359]	Best Angle: 134
Query: 3	Best Score: 0.953186	at [164, 230]	Best Angle: 115
Query: 4	Best Score: 0.968947	at [74, 52]	Best Angle: 15
Query: 5	Best Score: 0.955064	at [58, 154]	Best Angle: 75
Query: 6	Best Score: 0.950133	at [151, 138]	Best Angle: 5
Query: 7	Best Score: 0.975202	at [141, 360]	Best Angle: 22
Query: 8	Best Score: 0.962229	at [176, 50]	Best Angle: 354
Query: 9	Best Score: 0.953094	at [57, 239]	Best Angle: 75
Query: 10	Best Score: 0.948392	at [268, 267]	Best Angle: 316
Query: 11	Best Score: 0.977137	at [41, 342]	Best Angle: 276
Query: 12	Best Score: 0.949051	at [267, 163]	Best Angle: 89

Image: tmatch\_extra/a4.jpg

Query: 1	Best Score: 0.976002	at [277, 148]	Best Angle: 82
Query: 2	Best Score: 0.971961	at [142, 49]	Best Angle: 203
Query: 3	Best Score: 0.982548	at [266, 53]	Best Angle: 90
Query: 4	Best Score: 0.967952	at [275, 344]	Best Angle: 324
Query: 5	Best Score: 0.962667	at [56, 263]	Best Angle: 198
Query: 6	Best Score: 0.925846	at [187, 377]	Best Angle: 136
Query: 7	Best Score: 0.979782	at [162, 269]	Best Angle: 119
Query: 8	Best Score: 0.951505	at [77, 366]	Best Angle: 278
Query: 9	Best Score: 0.969292	at [276, 230]	Best Angle: 171
Query: 10	Best Score: 0.958287	at [71, 172]	Best Angle: 17
Query: 11	Best Score: 0.978575	at [175, 167]	Best Angle: 10
Query: 12	Best Score: 0.949259	at [56, 75]	Best Angle: 113

Image: tmatch\_extra/a5.jpg

Query: 1	Best Score: 0.965808	at [154, 370]	Best Angle: 180
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Query: 2	Best Score: 0.975026 at [142, 60]	Best Angle: 307
Query: 3	Best Score: 0.959174 at [244, 169]	Best Angle: 294
Query: 4	Best Score: 0.949833 at [250, 61]	Best Angle: 307
Query: 5	Best Score: 0.948515 at [51, 155]	Best Angle: 18
Query: 6	Best Score: 0.94113 at [147, 179]	Best Angle: 287
Query: 7	Best Score: 0.97301 at [269, 251]	Best Angle: 200
Query: 8	Best Score: 0.961736 at [261, 359]	Best Angle: 206
Query: 9	Best Score: 0.946506 at [67, 257]	Best Angle: 110
Query: 10	Best Score: 0.963244 at [178, 264]	Best Angle: 209
Query: 11	Best Score: 0.972277 at [42, 39]	Best Angle: 182
Query: 12	Best Score: 0.943908 at [54, 353]	Best Angle: 288

Image: tmatch\_extra/a6.jpg

Query: 1	Best Score: 0.994017 at [41, 42]	Best Angle: 0
Query: 2	Best Score: 0.977948 at [125, 43]	Best Angle: 1
Query: 3	Best Score: 0.995068 at [210, 42]	Best Angle: 0
Query: 4	Best Score: 0.954038 at [211, 210]	Best Angle: 1
Query: 5	Best Score: 0.968677 at [40, 128]	Best Angle: 0
Query: 6	Best Score: 0.980611 at [127, 126]	Best Angle: 0
Query: 7	Best Score: 0.970569 at [210, 293]	Best Angle: 1
Query: 8	Best Score: 0.958122 at [42, 212]	Best Angle: 0
Query: 9	Best Score: 0.960181 at [127, 212]	Best Angle: 1
Query: 10	Best Score: 0.9709 at [41, 297]	Best Angle: 0
Query: 11	Best Score: 0.987833 at [126, 296]	Best Angle: 0
Query: 12	Best Score: 0.957546 at [211, 127]	Best Angle: 0

Image: tmatch\_extra/a7.jpg

Query: 1	Best Score: 0.965341 at [52, 249]	Best Angle: 71
Query: 2	Best Score: 0.979188 at [131, 130]	Best Angle: 1
Query: 3	Best Score: 0.950254 at [53, 54]	Best Angle: 24
Query: 4	Best Score: 0.96941 at [227, 148]	Best Angle: 72
Query: 5	Best Score: 0.950934 at [54, 355]	Best Angle: 12
Query: 6	Best Score: 0.940747 at [239, 344]	Best Angle: 356
Query: 7	Best Score: 0.970741 at [154, 43]	Best Angle: 2
Query: 8	Best Score: 0.954504 at [153, 222]	Best Angle: 74
Query: 9	Best Score: 0.947244 at [248, 261]	Best Angle: 358
Query: 10	Best Score: 0.96048 at [43, 155]	Best Angle: 355
Query: 11	Best Score: 0.9741 at [251, 54]	Best Angle: 338
Query: 12	Best Score: 0.941561 at [147, 315]	Best Angle: 342

Image: tmatch\_extra/a8.jpg

Query: 1	Best Score: 0.970356 at [231, 140]	Best Angle: 22
Query: 2	Best Score: 0.967193 at [86, 402]	Best Angle: 64
Query: 3	Best Score: 0.952741 at [163, 309]	Best Angle: 23
Query: 4	Best Score: 0.952176 at [191, 396]	Best Angle: 12
Query: 5	Best Score: 0.955619 at [55, 61]	Best Angle: 26
Query: 6	Best Score: 0.954135 at [50, 202]	Best Angle: 252
Query: 7	Best Score: 0.960544 at [262, 240]	Best Angle: 38
Query: 8	Best Score: 0.974004 at [208, 57]	Best Angle: 27
Query: 9	Best Score: 0.942441 at [149, 222]	Best Angle: 290
Query: 10	Best Score: 0.957284 at [60, 300]	Best Angle: 265
Query: 11	Best Score: 0.974824 at [268, 340]	Best Angle: 274
Query: 12	Best Score: 0.939303 at [128, 122]	Best Angle: 286

real	15m51,554s
user	13m57,887s
sys	1m54,632s