

A minor bug was found which leads to a loss (in order of 1%, but the factor is problem-dependent) of time spent on surrogate model learning.

We would like to thank Mr. Dong Dong (jiajiadf@hotmail.com) for pointing out to this issue.

Details: Line 69 of RankSVM.cpp or/and line 49 of RankSVMLearn.cpp should be changed from $dL = \text{delta_alpha} * p_dKij[i1 * nAlpha + i1] * (p_sumAlphaDKij[i1] - 0.5 * \text{delta_alpha} + \text{epsilon});$ to $dL = \text{delta_alpha} * p_dKij[i1 * nAlpha + i1] * (p_sumAlphaDKij[i1] - 0.5 * \text{delta_alpha});$

The original formula with "+epsilon" is incorrect and in certain cases (on simple test problems like Sphere, Rosenbrock, etc., approximately once per 100 iterations of SMO, but the factor is problem-dependent) the algorithm does not pass "if (dL > 0)" since dL is negative while should ≥ 0 . Thus, the time spent on this particular Lagrangian multiplier is lost. The correction of the formula does not significantly change the results (no significant difference is observed in our experiments on BBOB functions).