

## Algorithm of Dynamic Programming for Optimization of the Global Matching between Two Contours Defined by Ordered Points

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### Summary

This work presents a new assignment algorithm with order restriction. Our algorithm was developed using the optimization technique of dynamic programming. It was implemented and tested to determine the best global matching that respects the order of the points that define two contours to be matched. In the experimental tests done, we used the affinity matrix obtained via the method proposed by Shapiro based on geometric modeling and modal matching.

The proposed algorithm revealed an optimum performance, when compared with classic assignment algorithms: Hungarian method, Simplex for Flow Problems and LAPm. Indeed, the quality of the matching improved when compared with these three algorithms, because the crossed matching, allowed by the conventional assignment algorithms, disappeared. Besides, the computational cost of our new algorithm is very low in comparison with the other three, resulting lesser execution times.

**keywords:** Image analysis, contours matching, optimization, dynamic programming

### References

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