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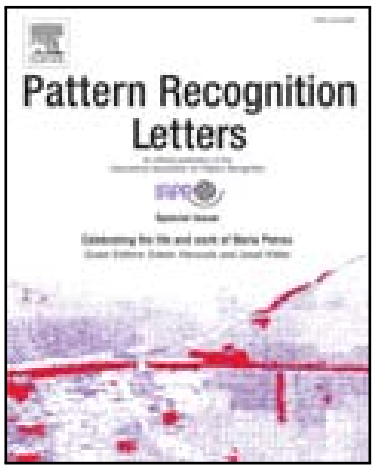


# All-in-one multicategory least squares nonparallel hyperplanes support vector machine

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PII: S0167-8655(17)30355-0
DOI: 10.1016/j.patrec.2017.09.035
Reference: PATREC 6947

To appear in: *Pattern Recognition Letters*

Received date: 6 February 2017
Revised date: 10 September 2017
Accepted date: 25 September 2017

Please cite this article as: Deepak Kumar, Manoj Thakur, All-in-one multicategory least squares nonparallel hyperplanes support vector machine, *Pattern Recognition Letters* (2017), doi: 10.1016/j.patrec.2017.09.035

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**Highlights**

- A least square version of nonparallel hyperplane support vector machine (LSNHSVM) is proposed.
- The proposed LSNHSVM is obtained by solving a system of linear equations.
- LSNHSVM is further generalized to solve multiclass classification problem directly.
- Multi-category LSNHSVM constructs all decision hyperplanes simultaneously by solving a system of linear equations.
- The proposed multi-category classifier is more efficient than multi-class SVM.

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