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Cost-sensitive classifier chains: selecting low-cost features in multi-label classification

Paweł Teisseyre, Damien Zufferey, Marta Słomka

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Highlights

- Novel method which incorporates the feature cost information into the learning process is proposed.
- The proposed method (CSCC) combines classifier chains and penalized logistic regression with a modified elastic-net penalty which takes into account costs of the features.
- We also propose an adaptive version (A-CSCC) in which penalty factors are changing during fitting the consecutive models in the chain.
- We prove the stability and provide a bound on generalization error of our algorithm.
- The method is successfully applied on real medical datasets for which cost information is provided by experts.
- We propose an experimental framework in which features are observed with measurement errors and the costs depend on the quality of the features.

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