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EDITORIAL

Guest Editors introduction: special issue of the ECMLPKDD 2015 journal track

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This special issue is a collection of papers submitted to the ECML PKDD 2015 journal track (and a few that rolled over from ECMLPKDD 2014) and accepted for publication in *Machine Learning*.

The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, ECMLPKDD is a merger of the formerly independent conferences ECML and PKDD.

ECMLPKDD launched its journal track in the current format in 2013. The journal track initiative had large adherence from the community. It was organized again in 2014 and 2015, and will continue in 2016. Two reference journals are involved: "Machine Learning" and "Data Mining and Knowledge Discovery". In addition to being published in the respective journal, papers were presented as regular papers in the conference. Thus, all papers of this special issue were also presented by their authors at the ECMLPKDD 2015 conference in Porto, Portugal, from September 7th to 11th, 2015.

In the journal track of this conference we look for high-quality submissions that present original and mature work in the areas of data mining and machine learning. However, given the special nature of a conference journal track, only papers that naturally lend themselves to being presented were considered. These requirements exclude, for example, journal ver-

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Table 1 Submissions statistics

Accepted	16
Rejected	36
Withdrawn	0
At authors for revision	10
Currently under review after revision	2
Currently under review 1st time	1
PAPERS RECEIVED (TOTAL)	65
Papers from 2014	4

sions of previously published conference papers as well as survey papers, which were not considered for the special issue.

The possibility of successive resubmissions of improved versions of a paper has a clear impact on the quality of the accepted papers. This way, the quality of the conference increases to the benefit of participants and readers.

For the 2015 edition, we fostered the continuity of the submission process. The first submission batch started on May 25, 2014, more than one year before the conference. During one year and a half we received batches bi-weekly. Overall, 189 papers were submitted (65 ML + 124 DAMI).

As for *Machine Learning*, at the time of the deadline to send the papers for journal production, 16 papers had been accepted. Other 13 papers are still under review. If accepted, these papers will go to the 2016 edition. Moreover, 4 papers accepted from the 2014 edition are included in this year's special issues. Table 1 summarizes the figures.

The papers included in this special issue of *Machine Learning* reflect the current hot topics. A steady trend is the growing importance of mathematical and statistical foundations of machine learning. Many of the papers contain keywords related to mixture models, Bayesian approaches, Markov processes, hypotheses testing, cross-validation, gradient methods and graphical models. Machine learning tasks include clustering, active learning, multi-class classification, ensemble learning, reinforcement learning and outlier detection. Dealing with features is still motivating innovative work on feature selection, feature regularization and active feature acquisition. While emerging topics like Social Media and Networks, Streams and Time Series as descriptors clearly indicate new paths, other more classical approaches and concerns still prove their values. Examples are inductive logic programming, event calculus, classifier evaluation, boosting and completing missing data. Finally, applications or potential applications include bioinformatics, video surveillance and brain decoding.

Figure 1 presents a visual summary[1], in the form of a word cloud, generated from the frequent words and bi-grams in the abstracts. Relevant words are related to methods and statistical tools.

This special issue would not have been possible without the help of many people. In particular, we would like to thank the members of the ECMLPKDD 2015 Guest Editorial board, as well as the additional referees for their hard work and timely reviewing of the papers submitted to the special issue. A special thanks to the very active reviewers, to the RAFT team and to Thanh Le Van for the editorial management system.

[1] Thanks to Carlos Ferreira.

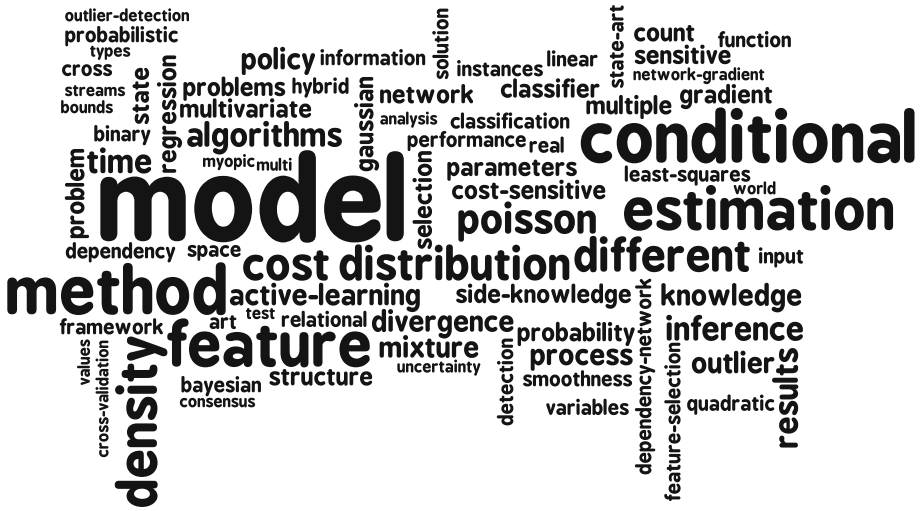

Fig. 1 Word cloud generated from the frequent words and bi-grams in the abstracts