

Preface

Recently, a field has emerged taking benefit of both domains: Data Mining (DM) and Natural Language Processing (NLP). Indeed, statistical and machine learning methods hold a predominant position in NLP research¹, advanced methods such as recurrent neural networks, Bayesian networks and kernel based methods are extensively researched, and “may have been too successful (...) as there is no longer much room for anything else”². They have proved their effectiveness for some tasks but one major drawback is that they do not provide human readable models. By contrast, symbolic machine learning methods are known to provide more human-readable model that could be an end in itself (e.g., for stylistics) or improve, by combination, further methods including numerical ones. Research in Data Mining has progressed significantly in the last decades, through the development of advanced algorithms and techniques to extract knowledge from data in different forms. In particular, for two decades Pattern Mining has been one of the most active field in Knowledge Discovery.

This volume contains the papers presented at the ECML/PKDD 2017 workshop: DMNLP’17, held on September 22, 2017 in Skopje. DMNLP’17 (Workshop on Interactions between Data Mining and Natural Language Processing) is the fourth edition of a workshop dedicated to Data Mining and Natural Language Processing cross-fertilization, *i.e* a workshop where NLP brings new challenges to DM, and where DM gives future prospects to NLP. It is well-known that texts provide a very challenging context to both NLP and DM with a huge volume of low-structured, complex, domain-dependent and task-dependent data. The objective of DMNLP is thus to provide a forum to discuss how Data Mining can be interesting for NLP tasks, providing symbolic knowledge, but also how NLP can enhance data mining approaches by providing richer and/or more complex information to mine and by integrating linguistic knowledge directly in the mining process. Out of 10 submitted papers, 6 were accepted.

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¹ D. Hall, D. Jurafsky, and C. M. Manning. Studying the History of Ideas Using Topic Models. In Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing, pp. 363–371, 2008

² K. Church. A Pendulum Swung Too Far. Linguistic Issues in Language Technology, Vol. 6, CSLI publications, 2011.