

Preface

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The field of data mining was born 30 years ago from the need to analyze large databases to extract patterns and association rules. Early work aimed to make the task feasible, with efficient algorithms to enable the exploration of large databases. Next, researchers focused on integrating database technology into knowledge discovery processes and vice-versa. This vision was formalized in the perspective of the inductive database introduced by T. Imielinski and H. Mannila (CACM 1996, 39(11)). The main idea is to consider knowledge discovery as an extended query process for which relevant query languages must be specified. Inductive databases gather not only the usual data, but also inductive generalization (e.g. patterns, models) contained in the data. Most of the afterward contributions aimed to extend the domains of patterns by proposing languages on complex data and measures of interest making possible flexible querying process where users are able to specify their needs. Knowledge discovery is seen as an interactive process in which users can query the inductive database to gain insight to the data and the patterns and models within that data.

Sixteen years after the last KDID workshop (held in Berlin in 2006), the inductive discovery of knowledge from data has been enriched with new concepts and methods. By leaving more room for interaction with the user, or on the contrary by being more automatic (less dependent on the arbitrariness of values that are difficult to set), pattern mining has explored different directions, both principled and applied. The idea of this workshop was to analyze the contributions that resulted from this seminal work.


The scientific program of the workshop included 5 papers, selected out of 7 submissions. The papers in this volume were revised by the authors based on the comments from the refereeing stage and ensuing discussions during the workshop, and were subjected to a final acceptance by the Program Committee.

The workshop was an opportunity to have the pleasure of hearing five guest speakers. Jean-François Boulicaut, Toon Calders, and Arno Siebes presented their view on the history of the field – ranging from a comprehensive overview by Calders, to more personal recollections by Boulicaut and Siebes – as well as its future. Perhaps surprising given the sixteen year gap between this and the previous KDID workshop, the common view was that Inductive Databases have a bright future: the more data is stored detailing the current state of the world, the more the

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need to answer queries about future states of the world and, ultimately, that is what inductive databases are for.

Next to these three presentations there were 2 video messages by Heikki Mannila and Luc de Raedt in which the speakers shared their warm memories of their founding research collaborations in Inductive Databases.

We wish to thank the invited speaker, all the authors who submitted their papers to the workshop, the Program Committee members for their help in the reviewing process, and the ECMLPKDD Organization Committee for their help and local organization.