International Workshop on Multi-Relational Data Mining (MRDM 2007)

Warsaw, Poland, September 17, 2007

http://www.di.uniba.it/~malerba/MRDM2007/

in conjunction with the ECML/PKDD-2007 Warsaw, Poland, September 17-21, 2007

http://www.ecmlpkdd2007.org/

Call For Papers

Data mining algorithms look for patterns in data. While most existing data mining approaches look for patterns in a single data table, *multi-relational data mining* (MRDM) approaches look for patterns that involve multiple tables (relations) from a relational database. Mining data which consists of complex/structured objects also falls within the scope of this field, since the normalized representation of such objects in a relational database requires multiple tables.

In recent years, the most common types of patterns and approaches considered in data mining have been extended to the multi-relational case and MRDM now encompasses relational association rule discovery, relational classification rules, relational decision and regression trees, and probabilistic relational models, among others. MRDM methods have been successfully applied across many application areas, ranging from the analysis of business data, through bioinformatics and pharmacology to Web Mining and Spatial Data Mining.

MRDM methods are based on two alternative approaches: propositional and structural.

The propositional approach requires the transformation of multi-relational data into a propositional (or attribute-value) representation by building features that capture relational properties of data. This kind of transformation, named propositionalization, decouples feature construction from model construction so that conventional propositional regression methods may be applied to transformed data, and a wider choice of robust and well-known algorithms is allowed.

The structural approach takes into account the original data structure, so that the whole hypothesis space is directly explored by the mining method.

Despite MRDM field has reached a relative maturity over the last years, there is still a number of interesting and open questions. One of the challenge of MRDM is concerned with combining expressive knowledge representation formalisms, such as relational and first-order logic, with principled probabilistic and statistical approaches to inference and learning. This combination is needed in order to face the challenge of real-world learning and data mining problems in which the data are complex and heterogeneous and we are interested in finding useful predictive and/or descriptive patterns.

The purpose of this workshop is to bring together researchers with background in data mining, machine learning, databases, ILP and statistics who are interested in the key questions of how finding patterns in expressive languages from complex, multi-relational and structured data and their applications. The workshop is the sixth of its kind. It follows the success of the workshops on Multi-Relational Data Mining, held at ECML/PKDD 2001, SIGKDD 2002, 2003, 2004 and 2005.

Topics of interest

MRDM 2007 calls for international contributions related to foundations, challenges and research opportunities raised by real-world learning and data mining problems in which the data are complex and heterogeneous. The goal of the workshop is to promote and publish research in the Multi-Relational Data Mining field. Suggested topics include (but not limited to) the following:

- Applications of (multi-)relational data mining
- Data mining problems that require (multi-)relational methods
- Distance-based methods for structured/relational data
- Inductive databases
- Kernel methods for structured/relational data
- Learning in probabilistic relational representations
- Link analysis and discovery
- Methods for (multi-)relational data mining
- Mining (semi-)structured data, such as amino-acid sequences, chemical compounds, HTML and XML documents, spatio-temporal data, ...
- Propositionalization methods
- Relational neural networks
- Relational pattern languages

Submission Instructions

Authors are invited to submit electronically original research and abstract papers in Portable Document Format (PDF) format.
Research papers should be at most 12 pages long whereas *extended abstract* should be at most 8 pages long.
Papers must be written in English.
Papers must be submitted electronically to *mrdm2007@di.uniba.it*.
Submitted papers will be evaluated by three reviewers. Acceptance will be based on relevance, technical soundness, originality, and clarity of presentation.
Accepted papers and extended abstracts will be published in the proceedings of the workshop.
Papers must be formatted using the Lecture Notes in Computer Science style available at http://www.springer.de/comp/lncs/authors.html .

In addition to the workshop proceedings, we intend to publish a selection of accepted papers in a journal special issue.

Important Dates

~~Workshop paper submission deadline:~~	~~June 30th, 2007~~
Workshop paper extended submission deadline:	July 7th, 2007
Workshop paper acceptance notification:	July 21st, 2007
Workshop paper camera-ready deadline:	July 28th, 2007
Workshop:	September 17th, 2007

General information

The workshop will maintain a balance between theoretical issues and descriptions of case studies to promote synergy between theory and practice. It aims to be a highly communicative meeting place for researchers working on similar topics, but coming from different communities. In order to achieve these goals, the workshop will consist on at least one invited talk, followed by both short and long presentations.

Authors should make certain that the techniques they describe deal with the issues that are associated with the workshop.

All ECML/PKDD'07 MRDM workshop participants must also register for the main ECML/PKDD conference. Workshop attendance will be limited to registered participants.

Organization

Chair
Donato Malerba – Department of Informatics, University of Bari, Bari, Italy

Co-Chairs
Annalisa Appice – Department of Informatics, University of Bari, Bari, Italy
Michelangelo Ceci – Department of Informatics, University of Bari, Bari, Italy

Program Committee:

Hendrik Blockeel (Katholieke Universiteit Leuven)
Jean-Francois Boulicaut (INSA Lyon)
Saso Dzeroski (Jozef Stefan Institute)
Peter Flach (University of Bristol)
Thomas Gaertner (Fraunhofer Institute for Autonomous Intelligent Systems)
Lise Getoor (University of Maryland)
David Jensen (University of Massachusetts)
Kristian Kersting (MIT Computer Science and Artificial Intelligence Laboratory)
Joerg-Uwe Kietz (Kdlabs AG, Zurich)
Arno Knobbe (Universiteit Utrecht)
Joost Kok (Leiden University)
Stefan Kramer (Technical University Munich)
Nada Lavrac (Jozef Stefan Institute)
Celine Rouveirol (University Paris Sud XI)
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Arno Siebes (Universiteit Utrecht)
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Further Information

Address any further inquiry to:

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