KDD MDM 2006 Call for Papers

MDM 2006 – The Seventh International Workshop on Multimedia Data Mining

In conjunction with KDD-2006: 12th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining August 20 - 23, 2006, Philadelphia, PA, USA (http://www.acm.org/sigkdd/kdd2006/)

(August 20, 2006)

MDM/KDD2006 WORKSHOP THEME

"Merging Multimedia and Data Mining Research"

http://www.fortune.binghamton.edu/MDM2006/

THE WORKSHOP

The seventh Workshop on Multimedia Data mining will be held in Philadelphia, PA, USA, August 20, 2006. The previous six workshops have been held in conjunction with KDD 2000 (Boston, MA), KDD2001 (San Francisco, CA), KDD 2002 (Edmonton, Canada), KDD 2003 (Washington, DC), KDD 2004 (Seattle, WA), and KDD 2005 (Chicago, IL), respectively. These workshops brought together numerous experts in the following fields: spatial data analysis, digital media, multimedia information retrieval, data mining and knowledge discovery in multimedia database systems, and analysis of data in collaborative virtual environments. Participants were pleased with the workshops and there was consensus about the necessity to continue this annual meeting, where researchers, both from the academia and industry, can exchange and compare both relatively mature and green house theories, methodologies, algorithms and frameworks for multimedia data mining.

The forthcoming workshop will focus on the theme of merging multimedia and data mining research together to exploit the synergy between the two areas to promote and advance the research on multimedia data mining. Multimedia and data mining are two very interdisciplinary and multidisciplinary areas with independently and simultaneously rapid developments in recent years. Many successful examples have been seen to address a series of pressing issues, in exploring and exploiting the synergy between both areas. This phenomenon is particularly true in many applications that call for efforts that combine the research from both areas under the theme of Multimedia Data Mining. This workshop attempts to dedicate to the research on this theme with the purpose to advance and disseminate the most recent research under this theme.

It is well known that multimedia information is ubiquitous and is often required, if not essential, in many applications. This phenomenon has made multimedia repositories widespread and extremely large. There are tools for managing and searching within these collections, but the need for tools to extract hidden useful knowledge embedded within multimedia collections is becoming pressing and central for many decision-making applications. For example, it is highly desirable for developing the tools needed today for discovering relationships between objects or segments within images, classifying images based on their content, extracting patterns in sound, categorizing speech and music, and recognizing and tracking objects in video streams.

Data mining research today has been advanced far beyond the area of databases. The efforts in this area have been focusing on data collected in fields such as art, design, hypermedia and digital media production, case-based reasoning and computational modeling of creativity, including evolutionary computation, and medical multimedia data. These exotic fields use a variety of data sources and structures, interrelated by the nature of the phenomenon that these structures describe. As a result there is an increasing interest in new techniques and tools that

can detect and discover patterns that lead to new knowledge in the problem domain where the data have been collected. There is also an increasing interest in the analysis of multimedia data generated by different distributed applications, such as collaborative virtual environments, virtual communities, and multi-agent systems. The data collected from such environments include a record of the actions in them, a variety of documents that are part of the business process, asynchronous threaded discussions, transcripts from synchronous communications and other data records. These heterogeneous multimedia data records require sophisticated preprocessing, synchronization and other transformation procedures before even moving to the analysis stage.

On the other hand, researchers in multimedia information systems, in the search of techniques for improving the indexing and retrieval of multimedia information, are looking for new methods for discovering indexing information. Variety of techniques from machine learning, statistics, databases, knowledge acquisition, data visualization, image analysis, high performance computing, and knowledge-based systems, have been used mainly as a research handcraft activity. The development of multimedia databases and their query interfaces recall again the idea of incorporating multimedia data mining methods for dynamic indexing. The emerging international standard for multimedia content description (MPEG-7) promises to foster the collaboration in the field giving a uniform data representation.

The next step for successful KDD applications will certainly involve both fields (Multimedia and Data Mining). Actually, it is well known that real world applications often have data with multiple modalities, from multiple sources and in multiple formats. For example, in homeland security applications, we may need to mine data from an air traveler's credit history, traveling patterns, photo pictures, and videotapes from surveillance cameras in the airport. In the manufacturing domains, business processes can be improved if, for example, part drawings, part descriptions and part flow can be mined in an integrated way instead of separately. In medicine, a disease might be predicted more accurately if the MRI (magnetic resonance imaging) imagery is mined together with other information about the patient's condition. Similarly, in bioinformatics data are available in multiple formats. While mining on structured data or each type of modality of multimedia data such as text data, imagery data, and video data has been broadly addressed, there has not been much effort focusing on integrated approaches to mining information from multiple modalities, multiple sources and multiple formats.

Consequently, it is important to have this workshop to dedicate to this emerging theme as a venue to advance and disseminate the most recent research on this theme.

To address this aim the workshop will bring together experts in the analysis of digital media content, multimedia databases, knowledge engineers and domain experts from different applied disciplines with potential in multimedia data mining. The workshop will facilitate the cross-disciplinary exchange of ideas. The major topics of the workshop include but are not limited to:

- Integrated mining of different data modalities (text, speech, video, structured, image, relational data)
- Combining mining results from different sources
- Integrated mining methods for eBusiness
- Mining of data streams combined with structure data
- Multi-relational Data Mining.
- Theoretical frameworks for multimedia data mining.
- Multimedia data sampling and preprocessing.
- Multimedia data visualization and sonification.
- Multimedia data descriptions languages and formats.
- HCIs for multimedia data mining.
- Real-time multimedia data mining systems.

- Distributed multimedia data mining.

Software demonstrations are welcome. We encourage submissions of ‘greenhouse’ work, which present early stages of cutting-edge research and development. In addition to the “regular” papers, we are also interested in the position papers regarding the work on the beginning.

WORKSHOP CO-CHAIRS

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SUBMISSION

There is no restriction on the length of submissions. Submission format should follow the standard ACM conference proceedings paper style. Contact author and email address should be specified. Electronic submission of papers in PDF, PS, RTF or Microsoft Word Document formats are preferable. The electronic submission should be sent as an email attachment to either zhongfei@cs.binghamton.edu or Florent.masseglia@sophia.inria.fr

DISSEMINATION

Peer-reviewed papers, accepted for presentation at the workshop will be published in the workshop proceedings and will also be included in ACM Digital Libraries. In order to encourage a large number of submissions to this workshop, best papers selected from the workshop papers will be recommended for publications in the upcoming special issue in IEEE Transactions on Multimedia on *Multimedia Data Mining* (see the CFP at the following link).

http://www.fortune.binghamton.edu/IEEE-T-MM-SI-MDM.htm

DEADLINES

Submissions Due: **June 5**	Acceptance: **June 26**	Camera ready copy: **July 10**

REGISTRATION

Registration for the workshop is free for the registrants of KDD-2006. The workshop is a one day event. Updated information on the workshop will be available at http://www.fortune.binghamton.edu/MDM2006/

WORKSHOP PROGRAM

The detailed program will be available after the paper submissions are due, and will be announced in the workshop webpage.

POTENTIAL INTERESTS FROM PUBLISHERS

Selected papers from the proceedings of two previous workshops have been organized as a collection of chapters published with Springer-Verlag in 2003 (O. R. Zaiane, S. J. Simoff, and C. Djeraba (Eds.) *Mining Multimedia and Complex Data,* Lecture Notes in Artificial Intelligence, vol. 2797, ISBN 3-540-20305-2, DOI:10.1007/b12031). Another edited book titled *Multimedia Data Mining and Knowledge Discovery* edited by Valery A. Petrushin and Latifur Khan based on selected papers from more recent editions of the workshop is in press now at Springer. An indicator of the importance and relevance of multimedia data mining is also the extreme interest of other leading scientific publishers.