IEEE COMPUTER SOCIETY

Jyväskylä, Finland
17-19 June 2008

IEEE CBMS 2008

21st IEEE International Symposium on COMPUTER-BASED MEDICAL SYSTEMS

Special Track on Knowledge Discovery and Knowledge-based Techniques and Systems in Medicine

Previous editions of this track at CBMS'07, CBMS'06 and CBMS'05

CALL FOR PAPERS

Advances in automatic data collection motivate the development of tools that are able to handle and analyze data and make use of it in a computer-supported fashion. Data mining has become a popular and effective way of discovering new knowledge from large and complex data sets, and particularly, medical data sets. Advances in data mining research and technology have made it possible to solve many interesting problems in medical diagnostics and healthcare.

As part of the symposium, the Special Track on Knowledge Discovery and Knowledge-based Techniques and Systems in Medicine invites original and high quality submissions addressing all aspects of knowledge representation and discovery, data mining and machine learning with application to the medical context.

This year we emphasize the openness of this track to a wider range of topics that cover different aspects of knowledge-oriented tools and systems including not only knowledge discovery and data mining- related aspects, but also more general aspects of knowledge-based techniques and systems in medical domains.

The topics of special interest include, but are not restricted to, the following:

- effective machine learning and data mining tools in medical applications
- classification
- clustering
- feature selection and feature transformation
- data streams and longitudinal data analysis
- mining medical data with time- and context-changing patterns and data distributions
- mining complex heterogeneous medical data including signals, images, clinical data, genomic and proteomic data
- visualization of data and data mining results
- evaluation and interpretation of data mining results
- case studies based on large medical databases
- knowledge-driven data mining approaches
- cost-sensitive data mining
- personalization and adaptation of medical information systems and services
- medical knowledge elicitation and representation
- expert (knowledge-based) systems
- integration of background knowledge in computer-based medical systems

This year the track includes **A Special Session on Machine Learning Methods for High-Dimensional Data in Bio-medicine** that is focused on an important problem of data complexity in terms of its dimensionality, sparsity and availability of labeled examples. To overcome these challenges different ways can be identified: the incorporation of domain specific knowledge, inherent regularizing methods, domain specific data representation, and other. Further, quality control and confidence estimation are important key issues of the machine learning tools and models for successful application in industry and research. The special session invites papers that cover the following not-exclusive list of topics:

- self-regularizing methods
- incorporation of domain-specific knowledge into the learning model
- processing of structured data and structure output
- standardized strategy for application specific data processing
- generalization abilities and sparse data
- partially labelled data and semi-supervised models

- processing of uncertainty information

Unlike workshops, where position papers and reports on initial and intended work are appropriate, papers selected for a special track should report on significant unpublished work suitable for publication as a conference paper.

IMPORTANT DATES

28 January 2008	Submission of paper (IEEE 2-column, 6-pages maximum)
1 March 2008	Notification of acceptance
28 March 2008	Final camera-ready paper due
28 March 2008	Pre-registration deadline
17-19 June 2008	Symposium

You must pre-register to have your paper published in the proceedings.

SUBMISSION PROCEDURES

No hardcopy submissions are being accepted. Electronic submissions of original technical research papers will only be accepted in PDF format. Use a maximum of **six pages IEEE two-column format**, including figures and references. All submissions will be done electronically via the CBMS 2008 **web submission system**. Select the track title; provide the information about the paper title, authors, keywords, and corresponding author's information (telephone, fax, mailing address, e-mail address). Please note that author names **should not** appear on the paper. Submit your manuscript no later than **January 28, 2008**. Authors will be notified of acceptance by 1st March 2008 after a review process by three independent experts. Each accepted paper to the Special Track on Data Mining will be published in the conference proceedings by IEEE CS Press, conditional upon the author's advance registration. Papers that were not accepted by the Program Committee of the track can be considered for publication as regular submissions by the General Program Committee of IEEE CBMS 2008. Please note that the format of IEEE CBMS 2008 proceedings will be the IEEE Computer Science Press 8.5x11-inch Two-Column Format. Submission is encouraged in this format.

More information about the symposium, registration fees, venue can be found at http://cbms2008.it.jyu.fi/.

TRACK CHAIRS

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SPECIAL SESSION CHAIRS

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TRACK PROGRAMME COMMITTEE

PC list is available from the website of the special track http://www.win.tue.nl/~mpechen/conf/cbms2008/

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