KALSIMIS 2018 Knowledge Acquisition and Learning in Semantic Interpretation...

Date : Jan 19, 2018 - 08:00 AM - Jan 21, 05:00 PM

Event URL : http://www.nyeventslist.com/events/kalsimis-2018-knowledge-acquisition-and-learning-in-semantic-interpretation

Organizer : New York Media Technologies LLC in association with INSTICC

Venue :

Location : Hotel Vila Galé Santa CruzRua São Fernando, 59100-173 Santa CruzPortugal, Portugal, Portugal, US, ZIP: Portugal

Description

Special Session on
Knowledge Acquisition and Learning in Semantic Interpretation of Medical Image Structures -KALSIMIS 2018

19 - 21 January, 2018 - Funchal, Madeira, Portugal

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CO-CHAIRS

Piotr Szczepaniak
Lodz University of Technology
Poland

Brief Bio

Piotr S. Szczepaniak received the MSc degree in automatic control from the Faculty of Electrical Engineering of the Lodz University of Technology, Poland, in 1977, and the PhD in automatic control and DSc in computer science both from the Technical University of Dresden, Germany, in 1982, and 1990, respectively. In 2005, he obtained the full professor title from the President of Poland. In the years 1996-2003 he was and since 2012 he is Head of the Institute of Information Technology of the Lodz University of Technology. Between 2005 and 2008 he was Dean of the Faculty of Technical Physics, Information Technology and Applied Mathematics. Since 2008 till 2012, he has been the Vice-rector for University Development and Business Affairs and since 2012 is a Vice-rector for University Development. In the years 1999-2008, he was a member of Systems Research Institute of the Polish Academy of Sciences. He is the organizer and he was the first President of the ICT Cluster of Central Poland. He is a member of the Polish Cybernetic Society, Polish Neural Networks Society, IEEE Signal Processing Society and the Senior Member of the IEEE Computer Society. His research experience covers optimal control theory, sensitivity analysis, and approximation of dynamic time-delay systems. At present, he is working in the field of computational intelligence and its applications to image analysis, pattern recognition, knowledge extraction and development of medical systems. His publishing activity is evidenced by over 160 individual or collective journal papers and conference contributions, as well as by the edition of books published by Springer-Verlag.

Piotr Grzelak
Department of Radiology and Imagining Diagnostic, Polish Mother's Memorial Hospital - Research Institute
Poland

Brief Bio

Piotr Grzelak acquired his experience in radiology and imagining diagnostic in leading clinical and scientific centers in Poland. After receiving his MD degree he worked as a assistant at the City Hospital in Lodz for six years. Next he worked two years as a assistant at the Regional Hospital in Lodz and since 2003 he worked in University Clinical Hospital No. 1. His PhD degree

he received in 2003 at the Medical University of Lodz. From 2006 he worked as a radiology consultant at the Medical University of Lodz. In 2013 he achieved his habilitation and in 2016 he received the Associate Professor position. In 2014 he began his work in Polish Mother's Memorial Hospital - Research Institute in Lodz as the Head of the Department of Radiology and Imagining Diagnostic in the Institute and in 2015 he was nominated by the Minister of Health as a member of Scientific Council of the Institute. The area of his clinical interest includes both adult and child radiology and imagining diagnostic with particular ultrasonography and magnetic resonance imagining (MRI) in arteriosclerosis and others disorders of nervous system. The scientific work has been concentrated on the molecular mechanisms of arteriosclerosis, mental disorders and orthopedic disorders. In the area of his interests were also proton spectroscopy MR and functional MR used in pathological processes and therapy in neurological diseases and other diseases associated with mental disorders. His publishing activity during last five years is evidenced by over 40 individual or collective contributions.

Arkadiusz Tomczyk
Lodz University of Technology
Poland

Brief Bio

Arkadiusz Tomczyk received the MSc degree in computer science in 2002 and the PhD with honours in computer science in 2011 from the Faculty of Technical Physics, Information Technology and Applied Mathematics of the Lodz University of Technology, Poland. Since 2002 he has been employed in the Institute of Information Technology of the Technical University of Lodz. His research experience covers image processing and analysis, especially active contour methods, as well as pattern recognition and machine learning techniques. From 2007 to 2010 he was engaged as an investigator in research grant devoted to contextual and semantic analysis of medical images and their sequences. At present, he is working mainly in the field of cognitive image content interpretation. He is a principal investigator in research grant focused on Cognitive Hierarchical Active Partitions, a method combining active contour approach with structural representation of image content. This method was presented at international trade fairs and shows of inventions and has been awarded silver medals at International Warsaw Invention Show 2011 (Poland, Warsaw) and International Exhibition of Inventions 2012 (Geneva, Switzerland). The project is supported by National Science Centre, Republic of Poland, project no. 2012/05/D/ST6/03091.

SCOPE

Current machine learning techniques are able to achieve spectacular results in automatic understanding of natural images whereas in the area of medical image analysis the progress is not that evident. The problem is medical knowledge essential for proper interpretation of image content. That knowledge, possessed by relatively small number of radiological experts, usually

cannot be directly expressed using mathematical formulas. This can be overcome by laborious knowledge acquisition or by techniques to some extent imitating expert behaviour. Both approaches are, however, still challenging tasks. That is why the goal of the special session is to discuss the problems in acquisition and utilization of domain knowledge in automatic understanding of semantic image structure.

TOPICS:
Both computer scientists and radiologists are welcome as participants. The session should constitute a perfect forum to express expectations, suggest solutions and share experience for members of those two communities.

The scope of the session contains, but is not limited to, the following topics:

- expert knowledge acquisition and representation methods (how effectively medical knowledge can be acquired and used in existing models of image analysis);

- classical image segmentation and object localization techniques capable of using domain specific knowledge (e.g. active contours and their generalizations);

- structural image representation and analysis (e.g. image decomposition, structured prediction, probabilistic graphical models);

- deep architectures in image analysis (e.g. convolutional neural networks).

Important Dates

Conference

Regular Papers
Paper Submission: September 5, 2017 (extended)
Authors Notification: October 16, 2017
Camera Ready and Registration: October 30, 2017

Position Papers
Paper Submission: September 29, 2017
Authors Notification: November 7, 2017
Camera Ready and Registration: November 20, 2017

Workshops
Workshop Proposal: August 31, 2017

Doctoral Consortium
Paper Submission: November 9, 2017

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Authors Notification: November 22, 2017
Camera Ready and Registration: December 5, 2017

Special Sessions
Special Session Proposal: August 31, 2017
Paper Submission: November 7, 2017
Authors Notification: November 21, 2017
Camera Ready and Registration: November 29, 2017

Tutorials
Tutorial Proposal: November 24, 2017

Demos
Demo Proposal: November 24, 2017

Panels
Panel Proposal: November 24, 2017

Keynote Lectures

Available Soon
Anatole Lécuyer, Inria Rennes/IRISA, Hybrid Research Team, France

Available Soon
Corina Sas, Lancaster University, United Kingdom

Available Soon
Dinesh Kumar, RMIT University, Australia

Available Soon
Maximiliano Romero, Università Iuav di Venezia, Italy

Keynote Lecture

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Anatole Lécuyer
Inria Rennes/IRISA, Hybrid Research Team
France

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Brief Bio

Anatole Lécuyer is senior researcher and head of Hybrid team at Inria (Rennes, France), the French National Institute for Research in Computer Science and Control, that he joined in 2002. His main research interests are in the field of Virtual Reality, and more specifically on 3D User Interfaces, Haptic Feedback, 3D Visual Displays, and Brain-Computer Interfaces (BCI). He has been involved often as coordinator or principal investigator in various National or International research projects such as in OpenViBE software for Brain-Computer Interfaces, French ANR projects "OpenViBE1" (05-09) and "OpenViBE2" (09-12) on Brain-Computer Interfaces and Virtual reality, European Strep project "NIW" (08-11) on Augmented Walking, and the European Network of Excellence "INTUITION" (05-08) on Virtual Reality. He regularly serves as expert in Virtual Reality and BCI for public bodies such as European Commission (EC) or French National Research Agency (ANR). He is involved in program committees of major conferences of his field (IEEE VR, IEEE 3DUI, Eurohaptics, Eurographics, etc) and was notably program co-chair of IEEE VR 2015, and IEEE 3DUI 2013. He is an associate editor of Frontiers in Virtual Environments and Presence, and formerly of ACM Transactions on Applied Perception (ACM TAP) and International Journal of Human-Computer Studies (IJHCS).

Keynote Lecture

Corina Sas
Lancaster University
United Kingdom

Brief Bio

Dr Sas builds on extensive expertise is Human Computer Interaction and user experience to design technologies for wellbeing and health, including those for self-monitoring, self-awareness and self-regulation. She has been Associate Chair for the top ACM Computer Human Interaction and Designing Interactive Systems conferences, Chair of British Human Computer Interaction conference, and served in Programme Committees in over 20 conferences. Her work has received extensive media covers including The Times, The New Scientist, Daily Mail, CBS, NBC, Medical Daily, Science Daily, News medical, and Health Medicine Network, as well as San Francisco radio, BBC 5 live radio, and BBC Hereford and Worcester radio. For her work on technologies for mindfulness she was mentioned in the TransTech200 (2016): an annual list of key innovators developing science-based research that significantly increases mental and emotional wellbeing. She has over 80 peer-reviewed publications, and has been an investigator on grants totalling over £10.5 million.

Keynote Lecture

Dinesh Kumar
RMIT University
Australia

Brief Bio

Dinesh research interests are related to medical applications of signals and image processing and the use of machine learning to classify medical signals. He is a member of the expert panel for prosthetic hand control (EU supported committee) and member on Therapeutic Goods Administration the advisory panel to ministry of health for medical devices. Dinesh has also extensive experience in technology translation and been successful with two technology start-up ventures.

Dinesh has received over $4 million in research funds over the past 12 years in research funding. He has published over 400 papers and authored 3 books, and has been cited about 4400 times. He is Associate editor for IEEE Transactions for neural systems and rehabilitation engineering.

Abstract
There has been significant progress in medical technology that provides early stage and detailed diagnosis of many diseases. This has enhanced the longevity and quality of life and we are now living longer and healthier, and significantly more independent. We are also able to perform relevant functional activities for significant period. However, many of these diagnostics can be performed only in major hospitals and require significant infrastructure such as qualified personnel, buildings, and electricity. This greatly limits the benefits of the technologies to be located in large urban centres.

Dinesh has been working towards changing the above paradigm and works for the development of diagnostic devices that are suitable for being used in remote regions by untrained healthcare personnel. Such devices provide automation of recording and analysis of the data, thereby do not require large buildings, and are suitable for the target audience. The success of such diagnostic devices is based on the development of advanced image and signal processing techniques that makes these devices noise tolerant and provide good quality diagnostics without high quality infrastructure.

Keynote Lecture

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Maximiliano Romero
Università Iuav di Venezia
Italy

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