Dear TC15 members,

Welcome to the June edition of our newsletter. This edition brings to you some updated Calls for Papers and upcoming conferences. Please note that two contests linked with Graph Matching are organized during ICPR 2016 showing the growth of interest for the topic.
Information about recent PhD, post-doctoral positions or young researchers CV dealing with Graphs could also be included in future newsletters.
Do not hesitate to send us (ramel@univ-tours.fr) brief abstracts, we will be pleased to include them in the next TC15 newsletter planned for September 2016. Remember that you can also find up-to-date information about our community on our web site (https://iapr-tc15.greyc.fr/index.php).

Best regards
Jean-Yves Ramel & Donatello Conte
TC15 newsletter editors

TC15

Table of content

Upcoming contests and competition dealing with Graphs

ICPR 2016 - Graph Distance Contest
Computing efficiently a robust measure of similarity or dissimilarity between graphs is a major challenge in Pattern Recognition. The Graph Edit Distance (GED) is a flexible measure of dissimilarity between graphs which arises in error-tolerant graph matching. In the last decade, several approaches have been proposed to either approximate the GED in polynomial time or to propose alternative graph metrics. We now consider that it is time to take stock of these different approaches through a contest.
The object of the contest consists in evaluating:
• the quality of the approximations provided by different implementations of GED
• the performances of GED compared to alternative metrics on some classification problems
The evaluations will consider both execution times and quality of the approximation when the GED is approximated. Datasets will be composed of graphs having either symbolic or numerical attributes. The size of graphs will also vary from about 10 nodes to about 1000 nodes.
This contest is organized by members and chairs of TC15 – IAPR Technical Committee on Graph Based Representations.

Detailed information could be consulted on the website: https://gdc2016.greyc.fr/
Important dates: Registration open: 10 June - Datasets available 10 June
Registration closed: 01 July - submission deadline : 31 July – Results: December 2016.

ICPR 2016 Competition on Subgraph Spotting in Graph Representations of Comic Book Images (SSGCI)

The SSGCI competition is a result of joint collaboration of various members (chair, executive, non-executive) of the following three technical committees of the International Association of Pattern Recognition (IAPR):

• TC10 – IAPR Technical Committee on GRAPHICS RECOGNITION
• TC11 – IAPR Technical Committee on READING SYSTEMS
• TC15 – IAPR Technical Committee on GRAPH BASED REPRESENTATIONS

The research problem of searching a query graph in a database of graphs is termed as "subgraph spotting". The proposed competition is focused on the research problem of subgraph spotting in a database of attributed graphs. The goal of the SSGCI competition is to spot a query attributed graph in a database of attributed graphs. This means that for a given query attributed graph the goal is to retrieve every graph in the database which contains this query graph and to provide node correspondences between the query and each of the result graphs.

Detailed information could be consulted on the website: http://icpr2016-ssgci.univ-lr.fr

May 30th 2016	Registration opened
June 6th 2016	Sample dataset of SSGCI competition is published
June 27th 2016	Registration to SSGCI competition is closed
July 1st 2016	Test dataset of SSGCI competition is published
July 15th 2016	Deadline for participants to submit results
July 22nd 2016	Deadline for participants to submit the descriptions of their methods
December 2016	Results of SSGCI competition are announced during ICPR 2016

New books or PhD on Graphs

New PhD thesis: Anytime and Distributed Approaches for Graph Matching. Zeina Abu-Aisheh. Université François Rabelais de Tours – France. May 18th, 2016.

http://www.rfai.li.univ-tours.fr/Documents/Articles_RFAI/PhD2016zeina.pdf

Abstract: Coming up with an exact Graph Edit Distance (GED) algorithm that can be scaled up to match graphs involved in PR tasks is a great challenge. Two promising ways to cut-off computational complexity are optimizing search space exploration and distributed algorithms. To this end, we first propose a depth-first GED algorithm which requires less memory and search time. Thereafter, to propose a trade-off between speed and optimality, we describe how to convert the proposed depth-first GED method into an anytime one that is capable of delivering the first solution very quickly. It also can find a list of improved solutions and eventually converges to the optimal solution instead of providing one and only one solution (i.e., the optimal solution). With the delight of more time, anytime methods can also reach the optimal solution. We analyze the properties of such methods to solve GM problems and consider the performance in terms of accuracy of the provided solution compared to the optimal or the best one found by a state-of-the-art method.

This thesis is also considered as a first attempt to reduce the run time of exact GED methods using parallel and distributed fashions. Two parallel and distributed GED approaches are put forward; both of them are based on the depth-first GED method.

To benchmark the proposed GED methods, we propose analyzing the behavior of the eight compared methods under time and memory constraints. In addition to the performance evaluations metrics, we propose a graph database repository dedicated to GED. In this repository, we add graph-level information to well-known and publicly used databases. This information helps in assessing the feasibility of exact and approximate GED methods. This thesis brings into question the usual evidences that claim that it is impossible to use exact error-tolerant GM methods in real-world applications when matching large graphs or even in a classification context.

Open positions and CV

The GREYC laboratory (France) offers one **PhD position** on gesture recognition based on touch tables. The PhD will have to design algorithms for the recognition of complex gestures on large tables. Multi-modality with the introduction of Depth camera will be also studied. The PhD will be conducted in close collaboration with a private company. Please contact Luc Brun (luc.brun@ensicaen.fr) for further information.

GREYC(France) and MIVIA (Italy) laboratories propose a **PhD position** on Graph based pattern recognition. The topic is still open, applicants should contact Luc Brun (luc.brun@ensicaen.fr) and Mario Vento (mvento@unisa.it) for further information.

Upcoming conferences & Call for papers

GBR 2017

11th IAPR-TC15 Workshop on Graph-based Representations in Pattern Recognition
May 16-18, 2017 - Anacapri (Italy),

Important dates

- *Paper submission January 8, 2017*
- *Notification of acceptance February 13, 2017*
- *Camera ready March 6, 2017*

Topics

- Graph matching
- Graph-based image segmentation
- Irregular (graph) pyramids
- Graph representation of shapes
- Graph distance and similarity measures
- Graph-based learning and clustering
- Data mining with graphs
- Kernel methods for graphs
- Graph embeddings
- Belief-propagation methods
- Graph-cuts methods
- Graphs in computational topology and bioinformatics
- Graphs in social network analysis

Web site : http://gbr2017.unisa.it

GraphSM 2016 (upcoming conference)

Third International Workshop on Large-scale Graph Storage and Management
June 26 - 30, 2016 - Lisbon, Portugal

Topics

- Search in graph databases; Algebra and logic of graphs;
- Expressive power of graph query languages;
- Formalizations of graph databases
- Graph data modelling
- Indexing methods for graph processing
- Storage systems for large-scale graph databases
- Flexible query answering on graph-structured data
- Graph pattern matching; Knowledge discovery
- Algorithms for graph database processing
- Biological and medical graph databases;
- Graph processing for Social Networks
- Visualizing

Web site : http://www.iaria.org/conferences2016/GraphSM.html

MLG 2016 (upcoming conference)

12th International Workshop on Mining and Learning with Graphs (MLG 2016)
August 14, 2016 - San Francisco, CA (co-located with KDD 2016)
http://www.mlgworkshop.org/2016/

ICPR 2016 (call for participation and for contests)

23rd International conference on Pattern Recognition
Dec 4-8, 2016, Cancun, Mexico
Organizing Committee
General Chair: Prof. Eduardo Bayro-Corrochano (CINVESTAV, Mexico)
Co-Chairs: Prof. Gerard Medioni (USC, USA), Prof. Gabriella Sanniti di Baja (CNR, Italy)

Track 1: Pattern Recognition and Machine Learning Track 2: Computer Vision and Robot Vision Track 3: Image, Speech, Signal and Video Processing Track 4: Document Analysis, Biometrics and Pattern Track 5: Biomedical Image Analysis and Applications	*Important Dates* • Notification of acceptance Jul 11, 2016 • Camera-Ready Sep 5, 2016 • Contest participation Sep 5, 2016

Website : www.icpr2016.org

S+SSPR 2016 (call for papers)

Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition (SSPR 2016) and Statistical Techniques in Pattern Recognition (SPR 2016)
Nov 30 - Dec 2, 2016, Mérida, Mexico
Organizing Committee: General Chair: Antonio Robles-Kelly, NICTA, Australia
SSPR Co-chairs: Francisco Escolano, University of Alicante, Spain
Richard Wilson, The University of York, UK
SPR Co-chairs: Marco Loog, Delft University of Technology, The Netherlands
Battista Biggio, University of Cagliari, Italy

Topics • Multiple Classifiers • Gaussian Processes • Clustering Algorithms • Semi-Supervised Learning • Active Learning • Contextual Pattern Recognition • Structural Matching • Spatio-Temporal Pattern Recognition • Structured Text Analysis	• Graph-theoretic Methods • Graphical Models • Structural Kernels *Important Dates* • Notification of acceptance Jul 12, 2016 • Camera-Ready Aug 29, 2016 • Early Registration Oct 3, 2016

Website : http://www.s-sspr.org/