

IAPR-TC18 - Discrete Geometry

Interim report

Period February-July 2013

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August, 2014

1 Administrative information

The TC18 governing board is composed of three members:

- Isabelle Sivignon (CNRS researcher, GIPSA-lab, Grenoble, France): chair, in charge of the relationship with DGCI ;
- Partha Bhowmick (associate professor, Indian Institute of Technology, Kharagpur India): vice-chair, in charge of code repository and databases management ;
- Rocio Gonzalez-Diaz (associate professor, School of Computer Engineering, University of Seville, Spain): vice-chair, in charge of educational material, tutorials, challenges (open problems).

TC18 now counts 88 members (+5 compared to 2013) from 20 countries. We can notice a significant growth of DG community in India.

A newsletter is sent to TC18 members twice a year (in January and July). The newsletters can be found on the website (<http://www.tc18.org/events.php>).

Moreover, the mailing list is also used to send punctual information concerning PhD defenses, open positions, or TC18 topics related conferences call for papers.

2 Relationships TC18/DGCI

2.1 DGCI Steering Committee

Since the creation of the TC18 ten years ago, a member of the TC18 board takes part in the Steering committee of the main TC18 conference DGCI (Discrete Geometry for Computer Imagery). This international conference takes place every 18 months. The Steering Committee is partially renewed at each DGCI edition. It is composed of:

- one organizer of the last six DGCI editions;
- some “permanent” members who carry with them the memory of the conference;
- a member of the TC18 board.

The next edition of DGCI will take place in Sienna (Italy), from the 10th to the 12th of September (dgci-conference.org). The call for papers is joined in Appendix.

For this edition, the SC, in coordination with the local organization committee, decided to renew the program committee of the conference and to propose new modalities to enhance the reviewing process. Therefore, a rebuttal phase has been introduced between the first review and

the acceptance result to give the authors a chance to answer the reviewers comments. There were 54 submissions from 16 countries. 22 papers were accepted for plenary oral presentation while 12 were accepted for poster presentation.

The TC18 mailing list is also used, through the newsletter, to launch the call for candidates to organize the next DGCI edition. Generally, two or three applications are received, and the choice is made during the DGCI SC meeting after careful reviews of the different application files. Therefore, the DGCI 2016 edition is not settled yet and should be decided during DGCI 2014.

2.2 TC18 meeting

A TC18 meeting is scheduled during each DGCI conference, in plenary session. It generally consists in giving general information about the TC, novelties on the website and recall that the members are welcome to submit new material (images, educational, code). In the future, the TC18 meeting could also be a catalyser for new collaborations through an open problem session.

3 Visibility of DG activities

3.1 Image Gallery & List of recent journal papers

TC18 plays an important role in spreading the DG activities. In particular, we see the TC18 website as a showcase of our expertise and know-hows. Our main concern in the last few months was to find ways to enhance the display of TC18 members work. To do so, we first created an image gallery (<http://www.tc18.org/gallery.php>). This gallery contains images from some very recent journal articles (published in 2013 or 2014) authored by TC18 members. The image caption contains the reference of the paper and a direct link to the paper itself. In some cases, the caption also contains a short explanation of the image.

Secondly, in January, we established a list of all the DG main journal papers published in 2013. To do so, we first defined the list of “good” journal papers to consider, and then collected all the references in DG in 2013. This list was sent to all the TC18 members in the newsletter sent in January, 2014. This list, together with the list of “good” journal papers is also available on the website. We plan to renew this work, and send the list of 2014 DG journal papers in January 2015.

3.2 Code and demos

In the last few years, a great effort has been made by the DG community to develop open-source libraries to spread DG tools and algorithms. We can for instance cite the DGtal library, or VIGRA. The list of these libraries is given on the code webpage (http://www.tc18.org/code_data_set/code.php). These libraries make the programming and cross-comparisons of algorithms easier, while ensuring sustainability and portability of the code. New releases of some of these libraries are announced through the TC18 mailing list.

Following DGCI 2011 demo session, a special issue in the journal Image Processing Online (<http://www.ipol.im>) was organized. Each article of this journal consists in a text explaining an algorithm, together with its source code. Both the algorithm and its implementation are reviewed. Moreover, an online demo is published on the website. The whole reviewing phase took quite some time for this special issue, but the first articles and demos are now available. We plan to add some links on the TC18 website to the IPOL articles in Discrete Geometry.

3.3 Educational

We already have nice material available in the Educational section of the website. The list of books is updated when a new book is published, and the list of major journal where DG results are published has been revised. Some of this material has already been transmitted to the

IAPR Education Committee (in the section 2D image analysis, computer vision), but it could be interesting to do an inventory of what is available and update the content accordingly.

4 Appendix - DGCI 2014 Call for papers

Second Call for Papers

The 18th International Conference on DISCRETE GEOMETRY for COMPUTER IMAGERY (DGCI 2014)

10-12 September 2014

Siena, Italy

<http://dgci2014.diism.unisi.it>

The aim of the DGCI conference is to gather researchers in discrete models, discrete geometry and topology, with applications in image analysis and image synthesis.

Discrete geometry plays an expanding role in the fields of shape modelling, image synthesis, and image analysis. It deals with topological and geometrical definitions of digitized objects or digitized images and provides both a theoretical and computational framework for computer imaging.

This edition of DGCI follows the successful 2013 edition held in Seville, Spain. DGCI 2014 is jointly organized by researchers of the Department of Information Engineering and Mathematical Science of the University of Siena (<http://www.diism.unisi.it>), and the Department of Mathematics and Computer Science of the University of Florence (<http://www.dimai.unifi.it>).

The main topics of interest include (but are not limited to):

- Models for Discrete Geometry (grids, discrete objects, discrete model properties, digitization schemes, metrics...);
- Discrete and Combinatorial Topology;
- Geometric Transforms (image mappings, distance transformation, skeletons and medial axis...);
- Discrete Shape Representation, Recognition and Analysis;
- Discrete Tomography;
- Morphological Analysis;
- Discrete Modelling and Visualization;
- Discrete and Combinatorial Tools for Image Segmentation and Analysis.

SUBMISSIONS AND GENERAL INFORMATION

Authors are required to submit in the online submission system (available soon on the web page of the conference) in PDF or PS format, a non-anonymous abstract of 250 words at most. Each abstract should clearly specify the achieved results and their significance in the related scientific area.

Articles should be prepared according to the LNCS recommendations and templates, submitted in the online submission system, and they should be at most twelve pages long. All papers must be submitted before the submission deadline. Keep in mind that papers that deviate too much from our guidelines will be returned to the authors. Submissions will be peer-reviewed by at least 2 qualified reviewers only after they satisfy our requirements to a minimal degree.

Authors of accepted papers must guarantee their presence at the conference. The proceedings will be published by Springer in the Lecture Notes in Computer Science series.

DEMO SESSION

Since the 16 th edition of DGCI 2011, a demo session is hosted during the conference. The purpose of this session is to provide the opportunity to present and share effective applications related to the main topics of DG.

More information about the demo session will be available at the conference web page, and a specific call will follow.

IMPORTANT DATES

Title + abstract submission: February 6th, 2014 (strict deadline)

Full paper submission: February 20th, 2014 (strict deadline)

Rebuttal phase: starting at April 7th, 2014

Full paper notification: May 1st, 2014

GENERAL CHAIRS

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Simone Rinaldi

Andrea Frosini

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