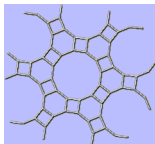


IAPR TC 18 “Discrete Geometry”



DGCI 2013, March 20-22, 2013

Facts

Outgoing Team

Ullrich Koethe (chair), Joost Batenburg (vice-chair), Guillaume Damiand (vice-chair)

Members

77 on the mailing list

Administrative considerations

- ▶ last biennial report to the IAPR in November, 2012
- ▶ TC18 Board should be renewed now !

What happened since DGCI 2011 ?

Research initiatives

- ▶ Book “Applications of Discrete Geometry and Mathematical Morphology”
 - ▶ from WADGMM 2010
 - ▶ 11 papers from keynote speakers and authors
 - ▶ Springer LNCS Volume 7346
- ▶ Special Issues after DGCI 2011
 - ▶ Discrete Applied Mathematics → ?
 - ▶ Computer Vision and Image Understanding Vol 117, Issue 4, April 2013: 12 papers, 7 are extended versions of DGCI papers
 - ▶ Image Processing Online: joint publication of algorithms and implementations → ?

www.tc18.org



IAPR Technical Committee
on DISCRETE GEOMETRY (TC18)



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important dates

November 28-30, 2012
[The 15th IWCIA workshop](#) will take place in Austin, Texas.
Join with the 1st GSAA symposium.
March 20-22, 2013
[The 17th DGCI conference](#) will take place in Sevilla, Spain.

last news - [rss feed](#)

- **[1 May 2012], IWCIA/GSAA CIP:** Extended dead line.
- **[30 March 2012], DGCI CIP:** DGCI Call for Papers available.
- **[1 February 2012], IWCIA/GSAA CIP:** IWCIA/GSAA Call for Papers available.
- **[1 September 2010], DGCI 2011 CIP:** Extended dead line.
- **[13 July 2010], IWCIA 2011 CIP:** IWCIA 2011 Call for Papers available.
- **[1 Mar 2010], DGCI 2011 CIP:** DGCI 2011 Call for Papers available.

[Archived news](#)

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Code

Libraries

Description	Main Reference	Language	Download
DGtal Digital Geometry Tools and Algorithms	---	C++	go
OLENA Image processing, image recognition, and artificial vision	---	C++	go
ORFEO Optical and Radar Federated Earth Observation	---	C++	go
VIGRA Vision with Generic Algorithms	---	C++	go

See [IPOL](#) (Image Processing On Line) for more references.

Grid, cells, structures and topology

and basic libraries to handle discrete objects...

Description	Main Reference	Language	Download	Snapshots	submitted by
Simplevol a simple and powerful library to manipulate 3D images	---	C++	go	see 3D data set web page	D.Cocurjolly
The Npic library provides types and functions in C language to manipulate bitmap images of dimension 2 to 6, and command line tools that give access to the library functions (drawing, distance transforms, medial axis, converting file formats, and more). Some computations are multi-threaded with OpenMP.	---	C	go		E.Thiel
Skeletonization for 2D binary data by curvature	---	C	go		A. Imiya
Boundaries Extraction for 3D binary images by Distance					

Software resources (1/2)

Generic C++ Libraries

DGtal <http://libdgtal.org> 

Generic, efficient and reliable **digital geometry data structures, algorithms and tools**

- ▶ 10 packages: Geometry, Topology, Shape, Graph, I/O, Arithmetic, Math, etc + ready-to-use binaries (DGtalTools)
- ▶ have a look at the poster !



Olena/Milena <http://www.lrde.epita.fr/>

Framework to implement simple, fast, safe, reusable and extensible image processing tool chains.

VIGRA: Vision with Generic Algorithms



Customizable algorithms and data structures

- ▶ Images and Arrays, Image processing, filters, segmentation, machine learning, math. tools

Software resources (2/2)

IPOL: Image Processing Online

- ▶ publish your algorithm and your source code
- ▶ test published algorithms online on your images




Image Processing On Line

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IPOL is a research journal of image processing and image analysis. Each article contains a text describing an algorithm and source code, with an online demonstration facility and an archive of online experiments. The text and source code are peer-reviewed and the demonstration is controlled. IPOL follows the Open Access and Reproducible Research models.

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[Articles: 2012](#) [2011](#) [2010](#) [Preprints](#) [Complete Index](#)

Latest Articles

<ul style="list-style-type: none">• Automatic Color Enhancement (ACE) and Its Fast Implementation 2012-11-06 · Pascal Getreuer• Color and Contrast Enhancement by Controlled Piecewise Affine Histogram Equalization 2012-10-17 · José-Luis Lloari, Ana Belen Peto, Catalina Sbert• The Flutter Shutter Camera Simulator 2012-10-17 · Yohann Tendo	<ul style="list-style-type: none">• Chan-Vese Segmentation 2012-09-08 · Pascal Getreuer• An Analysis and Implementation of the BM3D Image Denoising Method 2012-08-08 · Marc Lebrun• Total Variation Deconvolution using Split Bregman 2012-07-30 · Pascal Getreuer
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By Research Topic

<ul style="list-style-type: none">• 3D• Blur• Calibration• Color and Contrast• Computational Photography• Demosaicking• Denoising• Infrared	<ul style="list-style-type: none">• Inpainting• Interpolation• Image Comparison• Optical Flow• PDE• Segmentation and Edges• Texture• Other Topics
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News

<ul style="list-style-type: none">• Workshop on Reproducible Research in Signal, Image and Geometric Processing 2013-07-23• IPOL at the SMAI 2013 Congress -----	<ul style="list-style-type: none">• IPOL at the So Data! Conference on Open Science Data 2013-03-14• IPOL at FOSDEM: Software as Science 2013-02-02
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Future directions of TC18

New board

Isabelle Sivignon + 2 others → who wants to get involved ?

Main purpose of TC 18

Promote Digital Geometry on an international level

TC 18 as a catalyst

- ▶ share and spread information
- ▶ share and spread data sets, source codes
- ▶ share and spread material for master courses

TC 18 as a showcase

- ▶ settles the field in the pattern recognition community

Future directions of TC 18 (2/2)

How could we do more ?

What **we** could do

- ▶ renovation of the website
- ▶ alerts on PhD, papers in major journals
- ▶ reference to European or national projects, projects with industrial partners, with other research fields
- ▶ organize a summer school with other connected fields (mathematical morphology, TC 15, TC 10) ?

What **you** could do

- ▶ share your material
- ▶ spread your code
- ▶ inform us !