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International Workshop on Combinatorial Image Analysis



Buffalo, NY, USA, April 7-9, 2008

<http://www.cs.fredonia.edu/iwcia08>

IWCIA'08 is the twelfth of a series of international meetings on combinatorial image analysis. Previous meetings were held in Paris (France) 1991, Ube (Japan) 1992, Washington DC (USA) 1994, Lyon (France) 1995, Hiroshima (Japan) 1997, Madras (India) 1999, [Caen](#) (France, 2000), [Philadelphia](#) (USA, 2001), Palermo (Italy, 2003), [Auckland](#) (New Zealand, 2004) and [Berlin](#) (Germany, 2006).

Scope

Image analysis is a scientific discipline providing theoretical foundations and methods for solving problems appearing in a wide range of areas, as diverse as medicine, robotics, defense, and security. As a rule, the processed data are discrete; therefore, the "discrete approach" to image analysis appears to be a natural one and has an increasing importance. It is based on studying combinatorial properties of the considered digital data sets. Combinatorial image analysis often features various advantages (in terms of efficiency and accuracy) over the more traditional approaches based on continuous models requiring numeric computation.

Topics

The Workshop will be a forum for current research on topics such as the following:

- Combinatorial problems in the discrete plane and space related to image analysis; lattice polygons and polytopes
- Discrete/combinatorial geometry and topology and their use in image analysis
- Digital geometry of curves and surfaces
- Tilings and patterns; combinatorial pattern matching
- Image representation, segmentation, grouping, and reconstruction
- Methods for image compression
- Discrete tomography
- Applications of integer programming, linear programming, and computational geometry to problems of image analysis
- Parallel architectures and algorithms for image analysis
- Fuzzy and stochastic image analysis
- Grammars and models for image or scene analysis and recognition; cellular automata
- Mathematical morphology and its applications to image analysis
- Applications in medical imaging, biometrics, and others

Invited Speakers

An opening talk will be given by the special guest of IWCIA'08, [Dr. Herbert A. Hauptman](#) (Nobel Laureate, President of the [Hauptman-Woodward Medical Research Institute](#)). Keynote talks will be given by [Prof. Jake K. Aggarwal](#) from the [University of Texas at Austin](#), [Prof. Polina Golland](#) from [MIT](#) and [Prof. Arie E. Kaufman](#) from [SUNY Stony Brook](#). A closing talk will be given by [Prof. Gabor T. Herman](#), [Graduate Center](#), [the City University of New York](#).

Scientific Program

The scientific program of the workshop will consist of keynote addresses, contributed papers presented in a single track, and posters. The proceedings will be published in the [Springer's "Lecture Notes in Computer Science"](#) series. The authors of the best papers will be invited to submit extended versions for the special issue on [Pattern Recognition \(Elsevier\)](#).

Prospective authors are invited to submit a paper on some of the above or closely related topics. The submitted work should contain only results that are unpublished and not included in other work considered for publication elsewhere. In order to be accepted, a submitted paper will have to reach very high standards by satisfying serious evaluation criteria. Each paper will be thoroughly reviewed by three referees. Double-blind review process ensures maximal objectiveness.

Special Track on Applications

In addition to the theoretical research papers, a special track on applications will take place as a part of IWCIA'08. Authors are invited to submit original papers describing in detail working computer systems for image analysis. Industry representatives will be welcome to these presentations. The accepted papers will be published by [Balkema - Taylor & Francis](#) (pending approval). The authors of the best papers will be invited to submit extended versions for the special issue of [International Journal of Imaging Systems and Technology \(Wiley\)](#).

Social Program

During the workshop there will be a tour to the famous Niagara Falls. If there is enough interest, there may be a pre- or post-workshop tours to Genesee Country Village: the largest New York living history museum; Erie Canal linking Lake Erie to the Hudson River: an engineering marvel called the Eighth Wonder of the World; Corning Museum of Glass containing more than 45,000 objects spanning 35 centuries where you have the possibility to make your own glasswork; or Letchworth State Park, called the Grand Canyon of the East.

Important Dates

Full paper submission due
Notification of acceptance
Final camera-ready papers and author's registration
Workshop dates

October 10, 2007 October 17, 2007 (Extended)
November 10, 2007 November 17, 2007 (Extended)
December 5, 2007
April 7-9, 2008

