



XXV SIBGRAPI - Conference on Graphics, Patterns and Images

SIBGRAPI 2012

August 22-25, Ouro Preto, Brazil



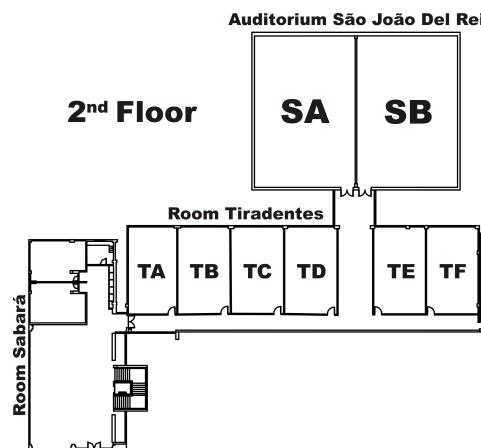
Technical Program

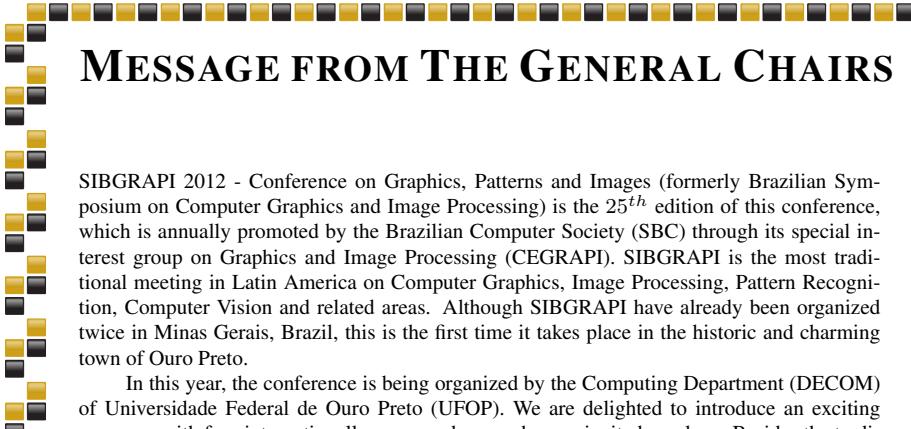
Invited Speakers
Tutorials
Technical Sessions
Theses and Dissertations
Undergraduate Works
Works in Progress
Industry Applications
Interactive Visualization

PROGRAM

	22/08 Wednesday				23/08 Thursday		24/08 Friday		25/08 Saturday	
08:30-08:45	Registration [Room Sabará]				Registration [Room Sabará]		Registration & Certificates [Room Sabará]		Registration & Certificates [Room Sabará]	
08:45-09:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				Technical Session TS1 [SA]	Technical Session TS2 [SB]	Technical Session TS5 [SA]	Technical Session TS6 [SB]	Technical Session TS7 [SA]	Technical Session TS8 [SB]
09:00-09:30	Coffee break				Coffee break		Coffee break		Coffee break	
09:30-10:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				Invited Talk Laurent NAJMAN [SA & SB]		Invited Talk Roberto Marcondes CESAR [SA & SB]		Invited Talk Rita CUCCHIARA [SA & SB]	
10:00-10:30	Lunch				Lunch		Lunch		Lunch	
10:30-10:45	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
10:45-11:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
11:00-11:15	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
11:15-11:30	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
11:30-12:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
12:00-12:30	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
12:30-13:00	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
13:00-13:30	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
13:30-14:00	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
14:00-14:30	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
14:30-15:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
15:00-15:30	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
15:30-15:45	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
15:45-16:00	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
16:00-16:30	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
16:30-17:00	Coffee break				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
17:00-17:30	T1 [TE] T2 [SB] T3 [TF] T4 [SA]				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
17:30-17:45	Lunch				WIVis [SA]		WGARI [SB]		Technical Session TS9 [SA & SB]	
17:45-18:00	Opening Session [SA & SB]				WIVis [SA]		WGARI [SB]		Technical Session TS10 [Poster] [TA-D]	
18:00-18:30	Invited Talk Sylvain LEFEBVRE [SA & SB]				SIBGRAPI 25 years' Special Session [SA & SB]		Closing Session [SA & SB]		WIP [Poster] [TA-D]	
18:30-19:00	Cocktail [Room Sabará]				CEGRAPI meeting [SA & SB]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
19:00-19:30	Cultural Evening [Casa da Ópera]				CEGRAPI meeting [SA & SB]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
19:30-20:00	Conference Dinner [Restaurante Bené da Flauta]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
20:00-20:30	Cocktail [Room Sabará]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
20:30-21:00	Cultural Evening [Casa da Ópera]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
21:00-21:30	Conference Dinner [Restaurante Bené da Flauta]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
21:00-22:30	Cocktail [Room Sabará]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	
22:00-23:00	Cultural Evening [Casa da Ópera]				WIP [Poster] [TA-D]		WIP [Poster] [TA-D]		WIP [Poster] [TA-D]	

CONVENTION CENTER MAP





MESSAGE FROM THE GENERAL CHAIRS

SIBGRAPI 2012 - Conference on Graphics, Patterns and Images (formerly Brazilian Symposium on Computer Graphics and Image Processing) is the 25th edition of this conference, which is annually promoted by the Brazilian Computer Society (SBC) through its special interest group on Graphics and Image Processing (CEGRAPI). SIBGRAPI is the most traditional meeting in Latin America on Computer Graphics, Image Processing, Pattern Recognition, Computer Vision and related areas. Although SIBGRAPI have already been organized twice in Minas Gerais, Brazil, this is the first time it takes place in the historic and charming town of Ouro Preto.

In this year, the conference is being organized by the Computing Department (DECOM) of Universidade Federal de Ouro Preto (UFOP). We are delighted to introduce an exciting program, with four internationally renowned researchers as invited speakers. Besides the traditional full-papers track and the workshops of Theses and Dissertations (WTD), Undergraduate Works (WUW) and Works in Progress (WIP), this year we announce two workshops: Workshop on Industry Applications (WGARI), which aims at integrating industry and academic researchers; and the Workshop on Interactive Visualization, in its 3rd edition, which will include an invited talk by a leading researcher in Data Visualization.

Moreover, in this year, we have obtained the technical co-sponsorship from IEEE Computer Society, and we maintained the status of "in cooperation" with the European Association for Computer Graphics (Eurographics).

Besides the traditional electronic proceedings distributed to the participants, WTD, WUW, WIP, WGARY and WIVis papers will be available through the website, and the technical papers sessions will be recorded and also made available. The technical papers will be included in the IEEE Digital Library and are already available at the SIBGRAPI Digital Library Archive, maintained by Instituto Nacional de Pesquisas Espaciais (INPE).

We are very grateful to all the chairs for their excellent work leading SIBGRAPI 2012 activities. We also would like to thank the authors of technical papers, tutorials, and workshops and the invited speakers for their invaluable collaboration to the success of SIBGRAPI 2012. Finally, we would like to thank the support from Universidade Federal de Ouro Preto (UFOP), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo à Pesquisa de Minas Gerais (FAPEMIG), Parque Metalúrgico (Centro de Artes e Convenções da UFOP), APERAM, Google, Microsoft, and Sociedade Brasileira de Computação (SBC).

We wish all participants a time full of opportunities for sharing their work and learn from others. Welcome to SIBGRAPI 2012!

*David Menotti, Guillermo Cámará Chávez and José Maria Ribeiro Neves
General and Local Chairs*



MESSAGE FROM THE PROGRAM CHAIRS

Welcome to the 25th SIBGRAPI - Conference on Graphics, Patterns and Images!

SIBGRAPI is the most prestigious conference in South America dedicated to Computer Graphics, Image Processing, Computer Vision, Pattern Recognition, and related areas. Formerly known as the Brazilian Symposium on Computer Graphics and Image Processing, it has been held in Brazil since 1988. SIBGRAPI has the status of "in cooperation" with Eurographics since 2009, and this year the conference obtained the technical co-sponsorship from the IEEE Computer Society.

To celebrate the 25th anniversary of SIBGRAPI in the historical city of Ouro Preto, Minas Gerais, we prepared a strong program with four keynote speakers, six tutorials and 45 papers in the technical papers track, as well as the traditional workshops of theses and dissertations (WTD), undergraduate works (WUW) and works in progress (WIP). Moreover two special workshops are also been held as part of the program, the Workshop on Industry Applications (WGARI), and the Workshop on Interactive Visualization.

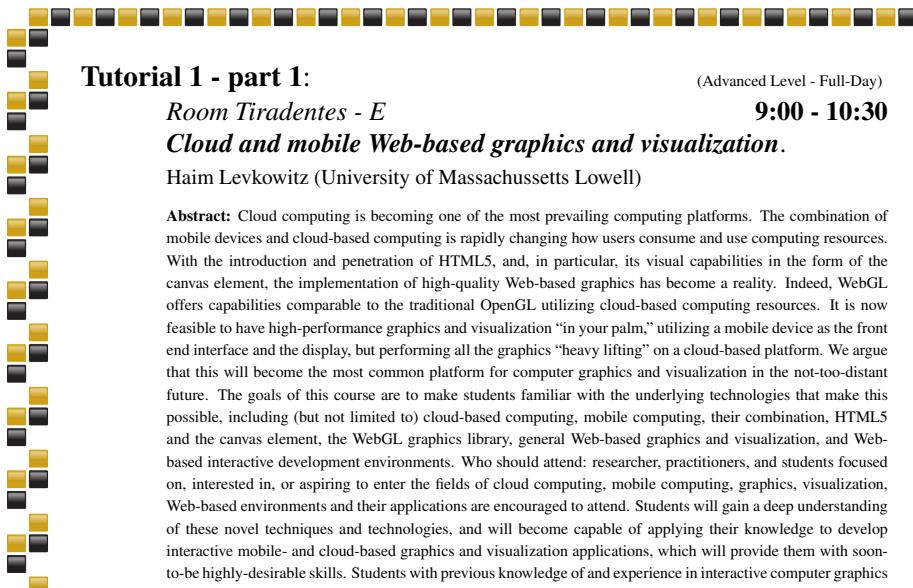
For the technical papers track, we received 103 submissions authored by 330 researchers from 12 countries, which were reviewed by 158 researchers. After the double blind review process, we accepted 45 papers, involving 165 different authors from 8 different countries. We thank all these authors, who have chosen SIBGRAPI to submit their work, and the reviewers, who dedicated a lot of their valuable time in the revision process.

We are deeply grateful to the local organization committee, the chairs and several committees in charge of the different technical activities, the invited speakers, the session chairs, and the tutorial instructors.

Finally, we thank several institutions that supported directly or indirectly the organization of SIBGRAPI 2012: Universidade Federal de Ouro Preto (UFOP), the Brazilian Computer Society (SBC), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo à Pesquisa de Minas Gerais (FAPEMIG), Parque Metalúrgico (Centro de Artes e Convenções da UFOP), APERAM, Google and Microsoft.

We wish all participants a great sharing experience during SIBGRAPI 2012!

Carla Dal Sasso Freitas, Roberto Scopigno, Sudeep Sarkar and Luciano Silva
Program Co-Chairs



Tutorial 1 - part 1:

Room Tiradentes - E

(Advanced Level - Full-Day)

9:00 - 10:30

Cloud and mobile Web-based graphics and visualization.

Haim Levkowitz (University of Massachusetts Lowell)

Abstract: Cloud computing is becoming one of the most prevailing computing platforms. The combination of mobile devices and cloud-based computing is rapidly changing how users consume and use computing resources. With the introduction and penetration of HTML5, and, in particular, its visual capabilities in the form of the canvas element, the implementation of high-quality Web-based graphics has become a reality. Indeed, WebGL offers capabilities comparable to the traditional OpenGL utilizing cloud-based computing resources. It is now feasible to have high-performance graphics and visualization “in your palm,” utilizing a mobile device as the front end interface and the display, but performing all the graphics “heavy lifting” on a cloud-based platform. We argue that this will become the most common platform for computer graphics and visualization in the not-too-distant future. The goals of this course are to make students familiar with the underlying technologies that make this possible, including (but not limited to) cloud-based computing, mobile computing, their combination, HTML5 and the canvas element, the WebGL graphics library, general Web-based graphics and visualization, and Web-based interactive development environments. Who should attend: researcher, practitioners, and students focused on, interested in, or aspiring to enter the fields of cloud computing, mobile computing, graphics, visualization, Web-based environments and their applications are encouraged to attend. Students will gain a deep understanding of these novel techniques and technologies, and will become capable of applying their knowledge to develop interactive mobile- and cloud-based graphics and visualization applications, which will provide them with soon-to-be highly-desirable skills. Students with previous knowledge of and experience in interactive computer graphics and visualization will gain much more value from this tutorial.

Tutorial 2 - part 1:

Auditorium São João Del Rei - B

(Elementary Level - Full-Day)

9:00 - 10:30

GPU programing with GLSL.

Rodrigo de Toledo (UFRJ), Thiago Gomes (UFRJ)

Abstract: Este tutorial propõe um *overview* sobre o pipeline gráfico programável da forma como temos hoje. Nossa proposta é criar um ambiente de aprendizado baseado em Coding Dojo. Como focaremos no ensino de programação em GPU, propomos a utilização de uma ferramenta de abstração de código de aplicação - o Shaderlabs, desenvolvida pelos mesmos autores deste tutorial.

Tutorial 3 - part 1:

(Intermediate Level - Full-Day)

Room Tiradentes - F

9:00 - 10:30

Interactive Graphics Applications with OpenGL Shading Language and Qt.

Joa Paulo Gois (UFABC), Harlen Batagelo (UFABC)

Abstract: The goal of this tutorial is to enable the attendants to develop interactive graphics applications with OpenGL using the Qt framework. One of the powers of the Qt framework is to allow for easy development of professional cross-platform applications using C++. In particular, Qt offers a full-featured framework to render OpenGL contexts and several classes that make easy the development of interactive graphics applications using OpenGL and OpenGL Shading Language (GLSL). For instance, Qt provides classes to manipulate matrices, vectors, OpenGL vertex buffer objects, textures and GLSL programs. As a by-product of the present tutorial we will illustrate that Qt is also a suitable framework to didactic purposes where, not only it can easily replace traditional window management libraries such as GLUT (OpenGL Utility Toolkit), but also offers the possibility to develop interactive sophisticated object-oriented applications.

Tutorial 4 - part 1:

(Intermediate Level - Half-Day)

Auditorium São João Del Rei - A

9:00 - 10:30

Kinect and RGBD Images: Challenges and Applications.

Leandro Cruz (IMPA), Djalma Lúcio (IMPA), Luiz Velho (IMPA)

Abstract: The Kinect is a device introduced in 2010 as an accessory of XBox 360. The data acquired has different and complementary natures, combining geometry with visual attributes. For this reason, the Kinect is a flexible tool that can be used in applications of several areas, such as: Computer Graphics, Image Processing, Computer Vision and Human-Machine Interaction. In this way, the Kinect is a widely used device in the industry (games, robotics, theater performers, natural interfaces, etc.) and in research. Initially in this tutorial we will present the main techniques related to the acquisition of data: capturing, representation and filtering. The data consists of a colored image (RGB) and depth information (D). This structure is called RGBD Image. After that, we will talk about tools available for developing applications on various platforms. We will also discuss some recent developed projects based on RGBD Images. In particular, those related to Object Recognition, 3D Reconstruction, and Interaction. In this tutorial, we will show research developed by the academic community, and some projects developed for the industry. We intend to show the basic principles to begin developing applications using Kinect, and present some projects developed at the VISGRAF Lab. And finally, we intend to discuss the new possibilities, challenges and trends raised by Kinect.

Tutorial 1 - part 2:

(Advanced Level - Full-Day)

Room Tiradentes - E

11:00 - 12:30

Cloud and mobile Web-based graphics and visualization.

Haim Levkowitz (University of Massachusetts Lowell)

Tutorial 2 - part 2:

(Elementary Level - Full-Day)

Auditorium São João Del Rei - B

11:00 - 12:30

GPU programing with GLSL.

Rodrigo de Toledo (UFRJ), Thiago Gomes (UFRJ)

Tutorial 3 - part 2:

(Intermediate Level - Full-Day)

Room Tiradentes - F

11:00 - 12:30

Interactive Graphics Applications with OpenGL Shading Language and Qt.

Joao Paulo Gois (UFABC), Harlen Batagelo (UFABC)

Tutorial 4 - part 2:

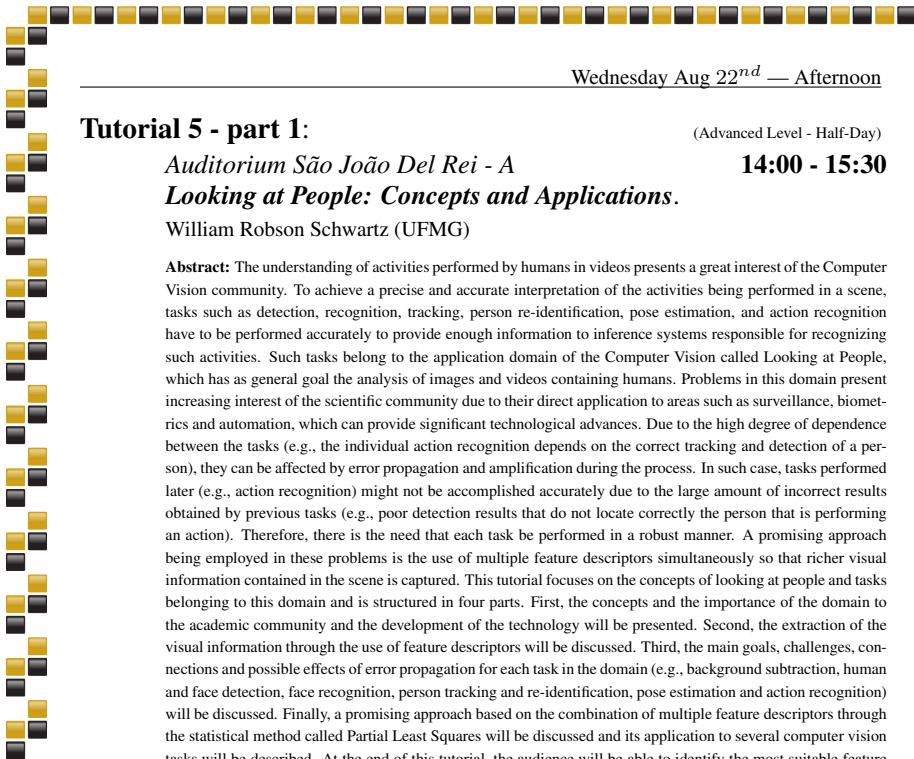
(Intermediate Level - Half-Day)

Auditorium São João Del Rei - A

11:00 - 12:30

Kinect and RGBD Images: Challenges and Applications.

Leandro Cruz (IMPA), Djalma Lúcio (IMPA), Luiz Velho (IMPA)



Wednesday Aug 22nd — Afternoon

Tutorial 5 - part 1:

(Advanced Level - Half-Day)

Auditorium São João Del Rei - A

14:00 - 15:30

Looking at People: Concepts and Applications.

William Robson Schwartz (UFMG)

Abstract: The understanding of activities performed by humans in videos presents a great interest of the Computer Vision community. To achieve a precise and accurate interpretation of the activities being performed in a scene, tasks such as detection, recognition, tracking, person re-identification, pose estimation, and action recognition have to be performed accurately to provide enough information to inference systems responsible for recognizing such activities. Such tasks belong to the application domain of the Computer Vision called Looking at People, which has as general goal the analysis of images and videos containing humans. Problems in this domain present increasing interest of the scientific community due to their direct application to areas such as surveillance, biometrics and automation, which can provide significant technological advances. Due to the high degree of dependence between the tasks (e.g., the individual action recognition depends on the correct tracking and detection of a person), they can be affected by error propagation and amplification during the process. In such case, tasks performed later (e.g., action recognition) might not be accomplished accurately due to the large amount of incorrect results obtained by previous tasks (e.g., poor detection results that do not locate correctly the person that is performing an action). Therefore, there is the need that each task be performed in a robust manner. A promising approach being employed in these problems is the use of multiple feature descriptors simultaneously so that richer visual information contained in the scene is captured. This tutorial focuses on the concepts of looking at people and tasks belonging to this domain and is structured in four parts. First, the concepts and the importance of the domain to the academic community and the development of the technology will be presented. Second, the extraction of the visual information through the use of feature descriptors will be discussed. Third, the main goals, challenges, connections and possible effects of error propagation for each task in the domain (e.g., background subtraction, human and face detection, face recognition, person tracking and re-identification, pose estimation and action recognition) will be discussed. Finally, a promising approach based on the combination of multiple feature descriptors through the statistical method called Partial Least Squares will be discussed and its application to several computer vision tasks will be described. At the end of this tutorial, the audience will be able to identify the most suitable feature extraction methods to be applied to a given task and will be aware of the importance of extracting richer visual information from the scene to obtain accurate results for the low level problems which allows the achievement of improved and robust solutions for the high level problems

Tutorial 1 - part 3:

(Advanced Level - Full-Day)

Room Tiradentes - E

14:00 - 15:30

Cloud and mobile Web-based graphics and visualization.

Haim Levkowitz (University of Massachusetts Lowell)

Tutorial 2 - part 3:

(Elementary Level - Full-Day)

Auditorium São João Del Rei - B

14:00 - 15:30

GPU programing with GLSL.

Rodrigo de Toledo (UFRJ), Thiago Gomes (UFRJ)

	
Tutorial 3 - part 3:	(Intermediate Level - Full-Day)
<i>Room Tiradentes - F</i>	14:00 - 15:30
<i>Interactive Graphics Applications with OpenGL Shading Language and Qt.</i>	
Joao Paulo Gois (UFABC), Harlen Batagelo (UFABC)	
	
Tutorial 6 - part 1:	(Advanced Level - Half-Day)
<i>Room Tiradentes - A</i>	14:00 - 15:30
<i>Transparency and Anti-Aliasing Techniques for Real-Time Rendering.</i>	
Marilena Maule (UFMG), João Comba (UFRGS), Rafael Torchelsen (Universidade Federal da Fronteira Sul - UFFS), Rui Bastos (NVIDIA)	
Abstract: The understanding of activities performed by humans in videos presents a great interest of the Computer Vision community. To achieve a precise and accurate interpretation of the activities being performed in a scene, tasks such as detection, recognition, tracking, person re-identification, pose estimation, and action recognition have to be performed accurately to provide enough information to inference systems responsible for recognizing such activities. Such tasks belong to the application domain of the Computer Vision called Looking at People, which has as general goal the analysis of images and videos containing humans. Problems in this domain present increasing interest of the scientific community due to their direct application to areas such as surveillance, biometrics and automation, which can provide significant technological advances. Due to the high degree of dependence between the tasks (e.g., the individual action recognition depends on the correct tracking and detection of a person), they can be affected by error propagation and amplification during the process. In such case, tasks performed later (e.g., action recognition) might not be accomplished accurately due to the large amount of incorrect results obtained by previous tasks (e.g., poor detection results that do not locate correctly the person that is performing an action). Therefore, there is the need that each task be performed in a robust manner. A promising approach being employed in these problems is the use of multiple feature descriptors simultaneously so that richer visual information contained in the scene is captured. This tutorial focuses on the concepts of looking at people and tasks belonging to this domain and is structured in four parts. First, the concepts and the importance of the domain to the academic community and the development of the technology will be presented. Second, the extraction of the visual information through the use of feature descriptors will be discussed. Third, the main goals, challenges, connections and possible effects of error propagation for each task in the domain (e.g., background subtraction, human and face detection, face recognition, person tracking and re-identification, pose estimation and action recognition) will be discussed. Finally, a promising approach based on the combination of multiple feature descriptors through the statistical method called Partial Least Squares will be discussed and its application to several computer vision tasks will be described. At the end of this tutorial, the audience will be able to identify the most suitable feature extraction methods to be applied to a given task and will be aware of the importance of extracting richer visual information from the scene to obtain accurate results for the low level problems which allows the achievement of improved and robust solutions for the high level problems	
	
Tutorial 1 - part 4:	(Advanced Level - Full-Day)
<i>Room Tiradentes - E</i>	16:00 - 17:30
<i>Cloud and mobile Web-based graphics and visualization.</i>	
Haim Levkowitz (University of Massachusetts Lowell)	
	
Tutorial 2 - part 4:	(Elementary Level - Full-Day)
<i>Auditorium São João Del Rei - B</i>	16:00 - 17:30
<i>GPU programing with GLSL.</i>	
Rodrigo de Toledo (UFRJ), Thiago Gomes (UFRJ)	

Wednesday Aug 22nd — Afternoon



Tutorial 3 - part 4:

Room Tiradentes - F **16:00 - 17:30**

Interactive Graphics Applications with OpenGL Shading Language and Qt.

Joao Paulo Gois (UFABC), Harlen Batagelo (UFABC)

(Intermediate Level - Full-Day)

Tutorial 5 - part 2:

Auditorium São João Del Rei - A **16:00 - 17:30**

Looking at People: Concepts and Applications.

William Robson Schwartz (UFMG)

(Advanced Level - Half-Day)

Tutorial 6 - part 2:

Room Tiradentes - A **16:00 - 17:30**

Transparency and Anti-Aliasing Techniques for Real-Time Rendering.

Marilena Maule (UFMG), João Comba (UFRGS), Rafael Torchelsen (Universidade Federal da Fronteira Sul - UFFS), Rui Bastos (NVIDIA)

(Advanced Level - Half-Day)

Wednesday Aug 22nd — Night

Opening Session

Chairs: D. Menotti (UFOP) & G. Câmara-Chávez (UFOP) & J. M. R. Neves (UFOP).

Auditorium São João Del Rei - A & B **18:00 - 19:00**

Cocktail

Typical and local snacks

Room Sabará **19:00 - 23:00**

Thursday Aug 23rd — Morning

TS1 Image/Video Filtering, Restoration and Segmentation

Chair: N. D. A. Mascarenhas (UFSCar).

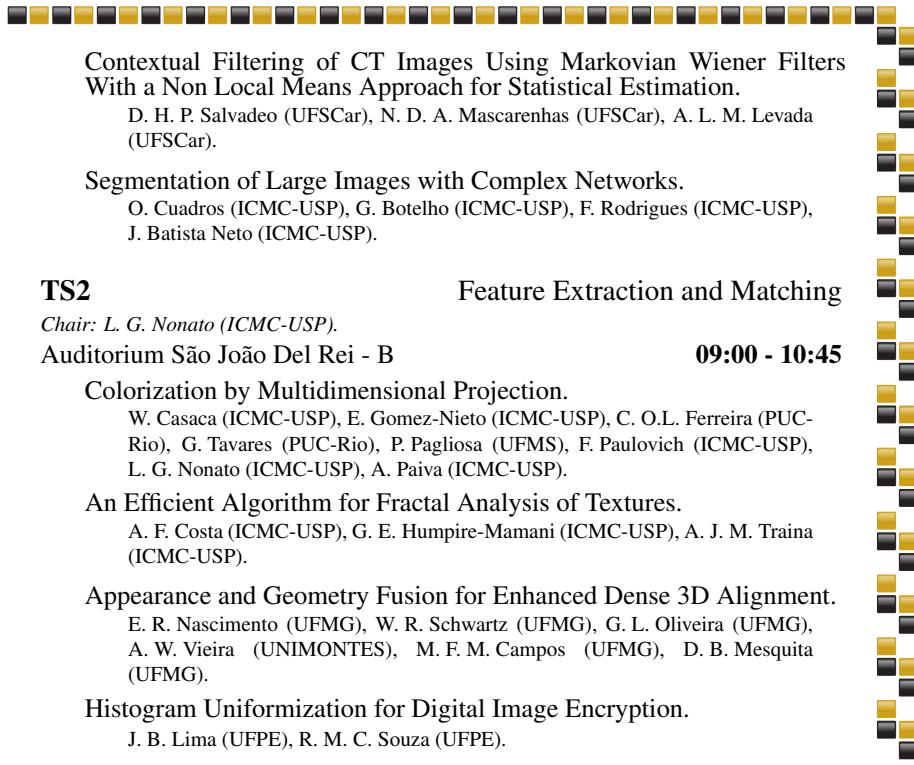
Auditorium São João Del Rei - A **09:00 - 10:45**

Unraveling the Compromise Between Skull Stripping and Inhomogeneity Correction in 3T MR Images.

F. A. M. Cappabianco (UNIFESP), P. A. V. Miranda (IME-USP), J. S. Ide (UNIFESP), C. L. Yasuda (UNICAMP), A. X. Falcão (UNICAMP).

Analysis in Sensibility of a Motion Detection Algorithm for Selecting Noise Reduction Methods in X-ray Image Sequences.

L. S. Silva (PUC-Minas), F. R. Rocha (PUC-Minas), L. B. Amaral (PUC-Minas), C. A. Carneiro (PUC-Minas), F. M. F. Ferreira (PUC-Minas), Z. M. A. Peixoto (PUC-Minas).

	
Contextual Filtering of CT Images Using Markovian Wiener Filters With a Non Local Means Approach for Statistical Estimation.	
D. H. P. Salvadeo (UFSCar), N. D. A. Mascarenhas (UFSCar), A. L. M. Levada (UFSCar).	
Segmentation of Large Images with Complex Networks.	
O. Cuadros (ICMC-USP), G. Botelho (ICMC-USP), F. Rodrigues (ICMC-USP), J. Batista Neto (ICMC-USP).	
TS2	Feature Extraction and Matching
<i>Chair: L. G. Nonato (ICMC-USP).</i>	
Auditorium São João Del Rei - B	09:00 - 10:45
Colorization by Multidimensional Projection.	
W. Casaca (ICMC-USP), E. Gomez-Nieto (ICMC-USP), C. O.L. Ferreira (PUC-Rio), G. Tavares (PUC-Rio), P. Pagliosa (UFMS), F. Paulovich (ICMC-USP), L. G. Nonato (ICMC-USP), A. Paiva (ICMC-USP).	
An Efficient Algorithm for Fractal Analysis of Textures.	
A. F. Costa (ICMC-USP), G. E. Humpire-Mamani (ICMC-USP), A. J. M. Traina (ICMC-USP).	
Appearance and Geometry Fusion for Enhanced Dense 3D Alignment.	
E. R. Nascimento (UFMG), W. R. Schwartz (UFMG), G. L. Oliveira (UFMG), A. W. Vieira (UNIMONTES), M. F. M. Campos (UFMG), D. B. Mesquita (UFMG).	
Histogram Uniformization for Digital Image Encryption.	
J. B. Lima (UFPE), R. M. C. Souza (UFPE).	

Laurent Najman (**Université Paris-Est, France**) Invited Talk

Chair: S. Sarkar (University of South Florida, USA).

Auditorium São João Del Rei - A & B **11:15 - 12:30**

Morphological Filtering in Shape Spaces: Applications using Tree-Based Image Representations

Abstract: Connected operators are filtering tools that act by merging elementary regions of an image. A popular strategy is based on tree-based image representations: for example, one can compute a shape-based attribute on each node of the tree and keep only the nodes for which the attribute is sufficiently strong. This operation can be seen as a thresholding of the tree, seen as a graph whose nodes are weighted by the attribute. Rather than being satisfied with a mere thresholding, we propose to expand on this idea, and to apply connected filters on this latest graph. Consequently, the filtering is done not in the space of the image, but on the space of shapes build from the image. Such a processing is a generalization of the existing tree-based connected operators. Indeed, the framework includes classical existing connected operators by attributes. It also allows us to propose a class of novel connected operators from the leveling family, based on shape attributes. Finally, we also propose a novel class of self-dual connected operators that we call morphological shapings. Illustrations of the interest of the proposed approach will be provided on several tree-based image representations, including min-tree, max-tree, tree of shapes and hierarchical segmentations.

Thursday Aug 23rd — Afternoon



Thursday Aug 23rd — Afternoon

TS3

Image/Video Analysis

Chair: A. Rocha (UNICAMP).

Auditorium São João Del Rei - A

14:00 - 15:45

Solving Image Puzzles with a Quadratic Programming Formulation.

F. Andaló (UNICAMP), G. Taubin (Brown University), S. Goldenstein (UNICAMP).

Open-set Source Camera Attribution.

F. O. Costa (UNICAMP), M. Eckmann (Skidmore College), W. J. Scheirer (Securis Inc.), A. Rocha (UNICAMP).

Multi-Scale Spectral Residual Analysis to Speed up Image Object Detection.

G. Silva (UFBA), L. Schnitman (UFBA), L. Oliveira (UFBA).

Image micro-pattern analysis using fuzzy numbers.

R. T. Vieira (EESC-USP), C. E. O. Chierici (EESC-USP), C. T. Ferraz (EESC-USP), A. Gonzaga (EESC-USP).

TS4

Geometric Modeling and Computational Geometry

Chair: L. H. Figueiredo (IMPA).

Auditorium São João Del Rei - B

14:00 - 15:45

Approximating implicit curves on triangulations with affine arithmetic.

A. Paiva (ICMC-USP), F. C. Nascimento (ICMC-USP), L. H. Figueiredo (IMPA), J. Stolfi (UNICAMP).

3D Triangulations for Industrial Applications.

P. R. Cavalcanti (UFRJ), Y. P. Atencio (UFRJ), C. Esperança (UFRJ), F. P. Nascimento (UFRJ).

ESQ: Editable SQuad representation for triangle meshes.

L. C. Aleardi (École Polytechnique), O. Devillers (INRIA Sophia-Antipolis), J. Rossignac (GATECH).

Connectivity Oblivious Merging of Triangulations.

L. F. Silva (UFRGS), L. F. Scheidegger (UFRGS), T. Etiene (University of Utah), L. G. Nonato (ICMC-USP), C. T. Silva (NYU), J. Comba (UFRGS).

WTD (Poster)

Workshop of Theses and Dissertations

Chairs: H. Lopes (PUC-Rio) & N. Hirata (IME-USP).

Room Tiradentes - A & B & C & D

15:45 - 17:30

A Comparative Study of Image Segmentation by Application of Normalized Cut on Graphs (M.Sc.).

A. Ferreira (UNICAMP), M. A. G. Carvalho (UNICAMP).

	
A Computer Vision Approach for the Features Extraction of Magnetic Force Field Lines in Coronal Solar Images (Ph.D.).	
C. W. Silva (INPE), J. E. R. Costa (INPE), R. R. Rosa (INPE).	
A Multibiometric Approach in a Semi Automatic Dental Recognition Using DIFT Technique and Dental Shape Features (M.Sc.).	
E. B. Barboza (UNESP), A. N. Marana (UNESP).	
Aceleração da Técnica de Cubos Marchantes para Visualização Volumétrica com Placas Gráficas (M.Sc.).	
M. V. M. Cirne (UNICAMP), H. Pedrini (UNICAMP).	
An Approach for Reducing the Training Set of the KNN Applied to Remote Sensed Hyperspectral Images Classification (M.Sc.).	
S. L. J. L. Tinoco (UFOP), D. Menotti (UFOP).	
An Evaluation on Color Invariant Based Local Spatiotemporal Features for Action Recognition (M.Sc.).	
F. D. M. Souza (UFMG), E. A. Valle Jr. (UNICAMP), G. Câmara-Chávez (UFOP), A. de A. Araújo (UFMG).	
An Unsupervised Approach for Boundary Detection of Colored Natural Scenes (Ph.D.).	
K. S. Komati (IFES Campus Serra), E. O. T. Salles (UFES), M. Sarcinelli Filho (UFES).	
Análise de Características para Detecção de Nudez em Imagens (M.Sc.).	
C. Santos (UFAM), E. M. Santos (UFAM), E. Souto (UFAM).	
Arquitetura para Recuperação de Imagens Médicas Baseada em Conteúdo: Uma Ferramenta para Auxílio à Radiologia em Ambiente PACS e DICOM SR (M.Sc.).	
C. A. Berni (UFSM), J. C. A. Berni (UFSM), J. A. T. B. Costa (UFSM).	
Combining Multiple Approaches for Accuracy Improvement in Remote Sensed Hyperspectral Images Classification (M.Sc.).	
A. B. Santos (UFMG), A. de A. Araújo (UFMG), D. Menotti (UFOP).	
Content-Based Retrieval for 3D Medical Models: A study case using Magnetic Resonance Imaging (M.Sc.).	
L. C. C. Bergamasco (EACH-USP), F. L. S. Nunes (EACH-USP).	
Content-Based Retrieval of Compressed Videos (Ph.D.).	
J. Almeida (UNICAMP), N. J. Leite (UNICAMP), R. da S. Torres (UNICAMP).	
Detecção da Direção do Olhar via Webcam (M.Sc.).	
R. G. Monteiro (UFRJ), C. Lima (UFRJ), A. C. G. Thomé (UFRJ).	

Evaluation of Real Time Tracking Methods for an Open Source Motion Capture System (M.Sc.).

D. P. Queiroz (UFMG), J. V. B. Gomide (FUMEC), A. de A. Araújo (UFMG).

Exploiting Contextual Information in Image Retrieval Tasks (Ph.D.).

D. C. G. Pedronette (UNICAMP), R. da S. Torres (UNICAMP).

Filtragem MAP 2-D de Imagens CT Ruidosas (M.Sc.).

R. J. Geraldo (UFSCar), N. D. A. Mascarenhas (UFSCar).

Image Segmentation based on Fuzzy Region Competition (M.Sc.).

V. R. P. Borges (UFU), Célia A. Z. Barcelos (UFU), D. Guliato (UFU), M. A. Batista (UFG).

Image Segmentation Pipeline Based on Level Set and Topological Derivative (M.Sc.).

D. A. Machado (LNCC), A. A. Novotny (LNCC), G. A. Giraldi (LNCC).

Method for Computational Analysis of Histopathological Images to Support the Diagnosis of Cervical Cancer (M.Sc.).

G. H. B. Miranda (FFCLRP-USP), J. Barrera (IME-USP), E. G. Soares (FMRP-USP), J. C. Felipe (FFCLRP-USP).

Métodos de Segmentação e Parcelamento do Corpo Caloso em Imagens de Tensores de Difusão (M.Sc.).

P. Freitas (UNICAMP), L. Rittner (UNICAMP), R. Lotufo (UNICAMP), S. Appenzeller (UNICAMP).

Modelagem Procedural de Folhas baseada em Padrões de Venação e de Pigmentação (M.Sc.).

T. C. Miranda (UFRGS), M. Walter (UFRGS).

Multiple Images Set Classification via Network Modularity (Ph.D.).

T. H. Cupertino (ICMC-USP), T. C. Silva (ICMC-USP), L. Zhao (ICMC-USP).

Pattern Recognition using Complex Networks (Ph.D.).

T. C. Silva (ICMC-USP), L. Zhao (ICMC-USP).

Proposta de um Modelo Visualmente Realístico para Simulação Virtual de Laparoscopia Orientada a Dados Médicos (M.Sc.).

A. L. P. Nunes (UFRGS), M. Walter (UFRGS), A. Maciel (UFRGS).

Registration and Fusion with Mutual Information for Information-preserved Multimodal Visualization (M.Sc.).

A. C. Valente (UNICAMP), S.-T. Wu (UNICAMP).

Sistema Biométrico Multimodal Baseado em Pupilometria Dinâmica (M.Sc.).

V. A. N. Yano (UNICAMP), A. Zimmer (UFPR).



Skeleton-based Human Segmentation in Still Images (Ph.D.).

J. C. S. Jacques Junior (PUC-RS), S. R. Musse (PUC-RS), Claudio R. Jung (UFRGS).

Uma Abordagem de Simplificação de Imagem Colorida baseada na Árvore Geradora Mínima (M.Sc.).

K. J. F. Souza (PUC-Minas), S. J. F. Guimarães (PUC-Minas).

Utilizando Propagação de Crença Não Paramétrica para Rastreamento de Movimento com Mínimo Uso de Informação a Priori (M.Sc.).

G. M. Simas (FURG), R. A. Bem (FURG), S. S. C. Botelho (FURG).

VSRV: Video Summarization for Rushes Videos (M.Sc.).

T. O. Cunha (UFMG), F. G. H. Souza (UFMG), G. L. Pappa (UFMG), A. de A. Araújo (UFMG).

WUW (Poster)

Workshop of Undergraduate Works

Chairs: A. Paiva (USP) & J. P. Papa (UNESP).

Room Tiradentes - A & B & C & D

15:45 - 17:30

Methodology for Evaluation of People Counting Methods based on Video Analysis.

V. H. C. Melo (UFOP), S. S. Almeida (UFOP), J. C. Mendes (UFOP), D. Menotti (UFOP).

A Scale Robust Calibration Method for Face Detection Framework.

P. H. R. Assis (PUC-Rio), M. F. M. Campos (UFMG).

Anotação automática de vídeo baseada na detecção de gestos em um ambiente de videoconferência.

T. S. Nazaré (ICMC-USP), R. V. C. Beber (ICMC-USP), M. P. Ponti Jr. (ICMC-USP).

Aplicabilidade de GPUs de baixo custo na Otimização da Análise de Similaridade de Imagens.

F. Prochazka (UFAL), M. C. Oliveira (UFAL).

Avaliação de técnicas de seleção de quadros-chave na recuperação de informação por conteúdo visual.

S. S. Pinho (PUC-Minas), K. J. F. Souza (PUC-Minas).

BRDF Fitting Using Inverse Global Illumination and Stochastic Optimization.

G. Pfeiffer (UFRJ), R. Marroquim (UFRJ).

Caracterização da atividade biológica usando análise de textura em speckles.

D. J. F. I. Lucena (UFAL), J. F. Silva (UFAL), M. C. Oliveira (UFAL), E. Lima (UFAL).

Computational System for Visualization and Lattice Boltzmann Fluid Simulation.

J. G. Mayworm (LNCC), S. F. Judice (LNCC), G. A. Giraldi (LNCC).

Contagem automática de colônias bacterianas com o uso das técnicas template matching e hough circles.

A. M. Pinheiro (UFGD), K. E. Souza (UFGD), V. V. V. A. Odakura (UFGD), W. P. Amorim (UFGD).

Determinação da orientação em linhas de cultura: investigando métodos de processamento de imagens para aplicação na agricultura de precisão.

C. S. Oliveira (UFSJ), G. D. Ferreira (UFSJ), J. P. H. Sansão (UFSJ), L. A. Mozelli (UFSJ), M. C. Silva Jr (UFSJ).

Displacement Mapping Techniques: Analysis and Comparisons.

G. N. Lima (UFABC), H. C. Batagelo (UFABC), J. P. Gois (UFABC).

Estereoscopia no cálculo de distância e controle de plataforma robótica.

G. R. P. Esteves (UPE), M. A. F. Feitosa (UPE), B. J. T. Fernandes (UPE).

Exploração de Métodos para Detecção Automática de Clquetes em Rushes Vídeos.

F. G. H. Souza (UFMG), T. O. Cunha (UFMG), A. de A. Araújo (UFMG).

Extração de Padrões de Imagens de Ultrassonografias Obstétricas utilizando Wavelets.

F. Alves Neto (ICMC-USP), L. Zhao (ICMC-USP).

Integrando Interface Tangível com Técnicas de Realidade Aumentada para Ampliar a Experiência Interativa do Usuário.

F. Rodrigues (UNIVEM), F. Sato (UNIVEM), L. Botega (UNIVEM).

Interface Luana: uma Aplicação Gráfica para o Ensino da Árvore Binária Kd-Tree.

R. D. Lima (UERJ), G. L. A. Mota (UERJ), P. E. D. Pinto (UERJ).

Normalização de Vetores Integrada ao Cálculo do Produto Escalar Utilizando Tabelas de Dispersão.

R. F. Silva (DCTA), G. Silva (FATEC Guaratinguetá), H. T. M. Santos (FATEC Guaratinguetá).

Poligonização de Superfícies Implícitas usando Técnicas Intervalares.

F. Lira (UFAL), D. Martínez (UFAL).

Quantização de imagens para geração de descritores compactos de cor e textura.

L. C. Escobar (ICMC-USP), M. P. Ponti Jr. (ICMC-USP).

Segmentação baseada em Textura e Watershed aplicada a imagens de Pólen.

W. T. Andrade (UCDB), L. N. B. Quinta (UCDB), A. B. Gonçalves (UCDB), M. P. Cereda (UCDB), H. Pistori (UCDB).

Studying The Added Value of Visual Attention in Objective Image Quality Metrics.

W. Akamine (UnB), M. Farias (UnB).

Técnicas de Programação em GPU Aplicadas à Visualização de Modelos com Múltiplas Texturas.

V. Andrade (UFRJ), R. Marroquim (UFRJ).

Uma Abordagem Escalável para Manutenção de Galeria de Faces.

G. P. Carlos (UNICAMP), H. Pedrini (UNICAMP), W. R. Schwartz (UFMG).

Uma resolução da equação de Laplace por Volumes Finitos e diagrama de Voronoi com refinamento adaptativo e de Ruppert.

T. H. Oliveira (UFLA), S. L. G. Oliveira (UFLA).

URGE: Motor para o Desenvolvimento de Jogos Eletrônicos.

A. A. A. O. Cardoso (UFRJ), V. C. Maia (UFRJ), R. de Toledo (UFRJ).

Visualização de grandes geobodies em tempo interativo com suporte a filtragem por componentes e valores.

L. Novaes (PUC-Rio), C. A. Campos (PUC-Rio), P. M. Silva (PUC-Rio), W. Celes (PUC-Rio).

Visualização de Informação com recursos colaborativos e interativos utilizando o padrão X3D.

A. F. C. Carmo (UNESP), M. H. Shimabukuro (UNESP).

Sylvain Lefebvre (INRIA Nancy/Loria, France)

Invited Talk

Chair: R. Scopigno (CNRS-ISTI, Italy).

Auditorium São João Del Rei - A & B

17:45 - 19:00

Texture Synthesis for Large Virtual Environments

Abstract: Abstract: A major difficulty in building vast, rich virtual worlds is the large amount of content that is required, in particular 3d meshes and textures. It is therefore not surprising that researchers in computer graphics started to consider methods to automatically generate this content.

Textures in particular have received much attention: Images of materials tend to occupy a large amount of memory and their content is often of a stochastic nature. On the one hand this randomness makes them hard to compress efficiently as images, but on the other hand one can hope to describe their content through algorithms. However, being able to compute textures of a given appearance only partially solves the problem: The generated data must also be available in a form allowing for high quality, interactive rendering.

In this talk I will describe the major challenges we are facing when synthesizing content for virtual worlds. I will focus on textures, describing the main families of approaches for their synthesis. I will also discuss which data structures may be used to hold the data being continuously generated as the user explores the scene. Along the talk I will point out directions of future research in this area.

Thursday Aug 23rd — Night

Thursday Aug 23rd — Night

Cultural Evening

Quartet Violinists from Ouro Preto's Orchestra

Casa da Ópera

20:30 - 21:30

Friday Aug 24th — Morning

TS5

Rendering and Visualization

Chair: J. Comba (UFRGS).

Auditorium São João Del Rei - A

09:00 - 10:45

Efficient HPR-based Rendering of Point Clouds.

R. M. Silva (UFRJ), C. Esperança (UFRJ), A. Oliveira (UFRJ).

Memory-Efficient Order-Independent Transparency with Dynamic Fragment Buffer.

M. Maule (UFRGS), J. Comba (UFRGS), R. Torchelsen (UFFS), R. Bastos (NVIDIA).

Ambient occlusion using cone tracing with scene voxelization.

E. C. D. Favera (PUC-Rio), W. Celes (PUC-Rio).

Rapid Visualization of Geological Concepts.

M. Natali (University of Bergen), I. Viola (University of Bergen), D. Patel (Christian Michelsen Research).

TS6

Computer Vision

Chair: S. Goldenstein (UNICAMP).

Auditorium São João Del Rei - B

09:00 - 10:45

Invariance for Single Curved Manifold.

P. M. M. Castro (UFPE).

Robust Patch-Based Pedestrian Tracking using Monocular Calibrated Cameras.

G. Führ (UFRGS), C. R. Jung (UFRGS).

Automatic tracking of indoor soccer players using videos from multiple cameras.

E. Morais (UNICAMP), S. Goldenstein (UNICAMP), A. Ferreira (UNICAMP), A. Rocha (UNICAMP).

Real-time Interactive Image Segmentation Using User Indicated Real-world Seeds.

R. B. Gomes (UFRN), R. V. Aroca (UFRN), B. M. Carvalho (UFRN), L. M. G. Gonçalves (UFRN).

Roberto Marcondes Cesar Jr (IME-USP)

Invited Talk

Chair: A. X. Falcão (UNICAMP).

Auditorium São João Del Rei - A & B

11:15 - 12:30

Graph-based Pattern Recognition and Applications

Abstract: Abstract: Structural pattern recognition plays a central role in many applications. Recent advances include new theoretical results, methods and successful applications. In the present talk, some recent graph-based methods for image segmentation will be shown. The presented methods include a new representation for graph-matching-based interactive segmentation and models for the analysis of spatial relations between objects. Applications will be presented and discussed.

Friday Aug 24th — Afternoon

WIVis - part 1

Workshop on Interactive Visualization

Chairs: F. Paulovich (ICMC-USP) & J. Comba (UFRGS) & L. G. Nonato (ICMC-USP).

Auditorium São João Del Rei - A

14:00 - 15:30

Interactive Visualization at UFRGS: Ongoing research at the Computer Graphics and Interaction Group.

J. Comba (UFRGS), A. Maciel (UFRGS), C. Freitas (UFRGS), L. Nedel (UFRGS), M. M. Oliveira (UFRGS).

RGBD Camera Effects.

D. Lucio (IMPA), L. Cruz (IMPA), L. Velho (IMPA).

Advanced Multidimensional Data Visualization via Point Placement and Dimension Reduction.

R. Minghim (ICMC-USP).

WGARI - part 1

Workshop on Industry Applications

Chairs: A. Saúde (UFLA) & S. J. F. Guimarães (PUC-Minas).

Auditorium São João Del Rei - B

14:00 - 15:30

Alisson Sol (Microsoft, USA)

Invited Talk

Chair: S. J. F. Guimarães (PUC-Minas).

Computer Vision in the Kinect for Windows

Abstract: Originally launched for the Xbox as an extension device for games and entertainment, the Kinect is the fastest-selling consumer electronics device in history. This presentation will describe the problems and solutions of migrating to the Windows environment one of the most complex algorithms currently in large-scale use. In a great example of direct application of academic results in image processing and machine learning, a minimum of 320x240 pixels with depth information are processed 30 times per second, allowing applications to be developed on top of the abstraction that one or two people are “seen” by the computer.



WIVis - part 2

Workshop on Interactive Visualization

Chairs: F. Paulovich (ICMC-USP) & J. Comba (UFRGS) & L. G. Nonato (ICMC-USP).

Auditorium São João Del Rei - A

16:00 - 17:30

Kwan-Liu Ma (University of California Davis)

Invited Talk

Chairs: F. Paulovich (ICMC-USP) & J. Comba (UFRGS) & L. G. Nonato (ICMC-USP).

Advanced Concepts and Techniques for Visualizing Large Data

Abstract: Advanced computing, imaging, and sensing technologies enable scientists to study natural and physical phenomena at unprecedented precision, resulting in an explosive growth of data. Furthermore, the size of the collected information about the Internet and mobile device users is expected to be even greater, a daunting challenge we must address in order to make sense and maximize utilization of all the available information for decision making and knowledge discovery. I will present a few new approaches to large data visualization for revealing hidden structures and gleaning insights from large, complex data found in many areas of study.

“Interactive Visualization in Brazil and Latin America: Present and Future”

Panel discussion

Participants: Kwan-Liu Ma (UC-Davis) & Haim Levkowitz (UMass Lowell) & Rosane Minghim (ICMC-USP) & João Comba (UFRGS).

WGARI - part 2

Workshop on Industry Applications

Chairs: A. Saúde (UFLA) & S. Guimarães (PUC-Minas).

Auditorium São João Del Rei - B

16:00 - 17:30

Broadcast Video Navigation Interface.

B. N. Teixeira (UFMG), J. E. E. Oliveira (UFMG), T. O. Cunha (UFMG),
A. de A. Araújo (UFMG), F. D. M. Souza (USF, USA).

Cutaway Applied to Corner Point Models.

Z. Martins Filho (University of Calgary), E. V. Brazil (University of Calgary),
M. C. Sousa (University of Calgary), F. Carvalho (UFRJ), R. Marroquim (UFRJ).

HTHM: Sistema gerenciador de tubos de trocadores de calor que emprega realidade aumentada em dispositivos móveis.

W. H. S. Santos (UFMA), A. C. Paiva (UFMA), A. C. Silva (UFMA),
C. C. Buruaga (Consórcio de Alumínio do Maranhão).

Image-based 3D digitizing for plant architecture analysis and phenotyping.

T. T. Santos (Embrapa Agriculture Informatics), A. Oliveira (Embrapa Agriculture Informatics).

Keyframe Control of Fluid Warping and Morphing using Adjoint Method.

D. Bonilla (IMPA), L. Velho (IMPA), L. G. Nonato (ICMC-USP).

Sistema Dinâmico para Reconhecimento de Íris Utilizando Imagens de Vídeo.

J. M. Souza (UFSCar), M. M. Fernandes (UFSCar).

Unified Framework for Counting Agriculture-Related Objects in Digital Images.

J. G. A. Barbedo (Embrapa Agricultural Informatics).

Friday Aug 24th — Night

SIBGRAPI 25 years' Special Session

Chair: O. Bellon (UFPR).

Auditorium São João Del Rei - A & B

18:00 - 19:00

CEGRAPI Meeting

Chair: L. G. Nonato (ICMC-USP), CEGRAPI President.

Auditorium São João Del Rei - A & B

19:00 - 20:00

Conference Dinner / Awards ceremony

Chairs: D. Menotti (UFOP) & G. Câmara-Chávez (UFOP) & J. M. R. Neves (UFOP).

Restaurante Bené da Flauta

21:00 - 23:00

The conference dinner and award ceremony will take place at *Restaurante Bené da Flauta* located at the Historical Center, close to Praça Tiradentes, at 21:00. Tickets are sold out.

Saturday Aug 25th — Morning

TS7

Modeling, Animation and Simulation

Chair: A. Oliveira (UFRJ).

Auditorium São João Del Rei - A

09:00 - 10:45

Modeling the Copacabana Sidewalk Pavement.

T. Waintraub (PUC-Rio), W. Celes (PUC-Rio).

Representing and Manipulating Mesh-based Character Animations.

E. Aguiar (UFES), N. Ukita (Nara Institute of Science and Technology).

Fluid Simulation on Surfaces in the GPU.

L. Carvalho (IMPA), M. Andrade (UFAL), L. Velho (IMPA).

Enhanced Target Driven Smoke Morphing.

M. C. Renhe (UFJF), A. Oliveira (UFRJ), C. Esperança (UFRJ), R. Marroquim (UFRJ).

TS8

Image/Video Analysis

Chair: R. Lotufo (UNICAMP).

Auditorium São João Del Rei - B

09:00 - 10:45

Video-Based Face Spoofing Detection through Visual Rhythm Analysis.

A. Pinto (UNICAMP), H. Pedrini (UNICAMP), W. R. Schwartz (UFMG), A. Rocha (UNICAMP).

Retinal Image Quality Analysis for Automatic Diabetic Retinopathy Detection.

R. Pires (UNICAMP), H. F. Jelinek (Charles Sturt University), J. Wainer (UNICAMP), A. Rocha (UNICAMP).

Vehicle Detection using Mixture of Deformable Parts Models: Static and Dynamic Camera.

L. C. Leon (IME-USP), R. Hirata Jr. (IME-USP).

A mixture of two gender classification experts.

Y. S. El-Din (Ain Shams University), M. Moustafa (The American University in Cairo), H. Mahdi (Ain Shams Univ.).

Rita Cucchiara (UNIMORE, Italy)

Invited Talk

Chair: L. Silva (UFPR).

Auditorium São João Del Rei - A & B

11:15 - 12:30

People Detecting, Identifying and Searching in Video Surveillance and Multimedia Forensics

Abstract: Many results of pattern recognition research can be directly suitable for applications in video surveillance and multimedia forensics, concerning people security. The talk will present how some state-of-the art solutions, in classification, clustering, similarity search are exploitable for analyze the presence, the activity and the identity of persons in video. Recent advances in efficient search based on “particle windows” for detecting people shapes in image and video will be discussed. Then a short review of the state of the art of approaches for people re-identification in video footage will be presented, without covering aspects related with biometry, but underlying methods for assessing similarity of people appearance with 2D and 3D body models. Many possible applications for tracking people in cluttered and crowded context, searching for aspect similarities in real-time video surveillance and in off-line forensics will be illustrated.

TS9

Pattern Recognition

Chair: D. Martínez (UFAL).

Auditorium São João Del Rei - A & B

14:00 - 15:45

Automatic Classifier Fusion for Produce Recognition.

F. A. Faria (UNICAMP), J. A. Santos (UNICAMP), A. Rocha (UNICAMP), R. da S. Torres (UNICAMP).

A Comparison between Optimum-Path Forest and k-Nearest Neighbors Classifiers.

R. Souza (UNICAMP), R. Lotufo (UNICAMP), L. Rittner (UNICAMP).

Real-time gesture recognition from depth data through key poses learning and decision forests.

L. Miranda (UFAL), T. Vieira (UFAL), D. Martínez (UFAL), T. Lewiner (PUC-Rio), A. W. Vieira (UNIMONTES), Mario F. M. Campos (UFMG).

Searching for People through Textual and Visual Attributes.

J. Fabian (UNICAMP), R. Pires (UNICAMP), A. Rocha (UNICAMP).

TS10 (Posters)

Texture Synthesis and Image Processing

Chairs: C. Freitas (UFRGS) & D. Menotti (UFOP).

Room Tiradentes - A & B & C & D

15:45 - 17:30

Texture Synthesis of Contrasting Natural Patterns.

F. Queiroz (UFAL), M. Walter (UFRGS).

BBA: A Binary Bat Algorithm for Feature Selection.

R. Y. M. Nakamura (UNESP), L. A. M. Pereira (UNESP), K. A. Costa (UNESP), D. Rodrigues (UNESP), J. P. Papa (UNESP), X.-S. Yang (National Physical Laboratory).

A tensor based on optical flow for global description of motion in videos.

V. F. Mota (UFJF), E. A. Perez (UFJF), M. B. Vieira (UFJF), L. M. Maciel (UFJF), F. Precioso (ENSEA), P.-H. Gosselin (ENSEA).

Multi-Modal Acoustic Echo Canceller for Video Conferencing Systems.

M. Gazziro (ICMC-USP), G. Almeida (Wernher von Braun Center), P. Matias (IFSC-USP), H. Tanaka (TOSHIBA Co.), S. Minami (TOSHIBA Co.).

Error Concealment Using a Halftoning Watermarking Technique.

P. G. Freitas (UnB), R. Rigoni (UnB), M. C. Q. Farias (UnB), A. P. F. Araújo (UnB).

Structural Analysis of Histological Images to Aid Diagnosis of Cervical Cancer.

G. H. B. Miranda (FFCLRP/USP), J. Barrera (IME-USP), E. G. Soares (FFCLRP-USP), J. C. Felipe (FCM-USP).

Improving Image Classification Through Descriptor Combination.

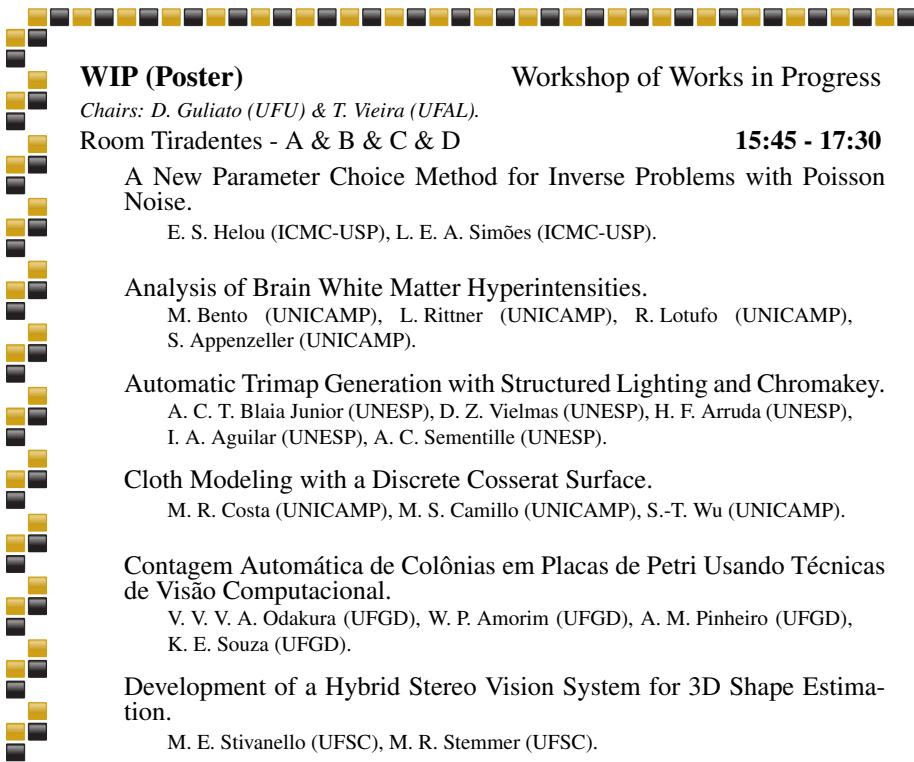
A. Mansano (USP), J. A. Matsuoka (UNESP), L. C. S. Afonso (USP), J. P. Papa (UNESP), F. Faria, R. da S. Torres (UNICAMP).

Supervised Learning Using Local Analysis in an Optimal-Path Forest.

W. P. Amorim (UFMS), M. H. Carvalho (UFMS).

Computing gender difference using Fisher-Rao metric from facial surface normals.

S. R. Ceolin (Centro Universitário Franciscano), E. R. Hancock (University of York).



WIP (Poster)

Workshop of Works in Progress

Chairs: D. Guliato (UFU) & T. Vieira (UFAL).

Room Tiradentes - A & B & C & D

15:45 - 17:30

A New Parameter Choice Method for Inverse Problems with Poisson Noise.

E. S. Helou (ICMC-USP), L. E. A. Simões (ICMC-USP).

Analysis of Brain White Matter Hyperintensities.

M. Bento (UNICAMP), L. Rittner (UNICAMP), R. Lotufo (UNICAMP), S. Appenzeller (UNICAMP).

Automatic Trimap Generation with Structured Lighting and Chromakey.

A. C. T. Blaia Junior (UNESP), D. Z. Vielmas (UNESP), H. F. Arruda (UNESP), I. A. Aguilar (UNESP), A. C. Sementille (UNESP).

Cloth Modeling with a Discrete Cosserat Surface.

M. R. Costa (UNICAMP), M. S. Camillo (UNICAMP), S.-T. Wu (UNICAMP).

Contagem Automática de Colônias em Placas de Petri Usando Técnicas de Visão Computacional.

V. V. V. A. Odakura (UFGD), W. P. Amorim (UFGD), A. M. Pinheiro (UFGD), K. E. Souza (UFGD).

Development of a Hybrid Stereo Vision System for 3D Shape Estimation.

M. E. Stivanello (UFSC), M. R. Stemmer (UFSC).

Deviceless Gestural Interaction in Public Displays.

T. Motta (UFRGS), L. Nedel (UFRGS).

Elementos de um laboratório virtual de Física controlados por Wiimote.

R. Scalco (CEUN-IMT), S.-T. Wu (UNICAMP).

Filtragem de Projeções Tomográficas Utilizando Estimadores MAP.

E. S. Ribeiro (CEFET-MG), N. D. A. Mascarenhas (UFSCar).

Forensic Facial Reconstruction using HRBF.

R. Romeiro (UFRJ), R. Marroquim (UFRJ), C. Esperança (UFRJ).

Identificação de Câmeras baseada no Ruído Padrão do Sensor usando Métodos Estatísticos.

L. Torres (RASTRU), A. S. Nascimento (RASTRU), V. Ramos (RASTRU), J. Alencar-Neto (RASTRU).

Identificação Precoce de Fadiga em Atletas por Reconhecimento de Padrões em Movimentos Oculares e Variabilidade da Frequência Cardíaca.

D. Schmaedech (UFSC), E. Takase (UFSC), J. Bastos (UFSC).

- 
- Integrando Inferência dos Parâmetros de Vôo Associando o Movimento do Horizonte com Informações da Câmera.
M. M. R. Lima (UFAM), J. L. S. Pio (UFAM).
- Interactive visualization of well data for supporting geological reservoir modelling.
O. P. Silva (UFRGS), C. M. D. S. Freitas (UFRGS), M. Abel (UFRGS).
- Modeling Deformable Objects as Compliant Mechanisms.
D. F. Silva (UFRGS), A. Maciel (UFRGS).
- Motion segmentation from texture and depth images using graph homomorphism.
D. S. Pires (IME-USP), R. M. Cesar-Jr (IME-USP), L. Velho (IMPA).
- Object Extraction in RGBD images.
F. Prada (IMPA), L. Cruz (IMPA), L. Velho (IMPA).
- Otimizando a Transformada de Hough com Interseção de Semiespaços.
J. F. Santos (UFF), L. A. F. Fernandes (UFF).
- Plataforma para Autoria de Jogos Simples.
P. M. R. Souza (UFRJ), C. Esperança (UFRJ), R. Marroquim (UFRJ).
- Poisson Surface Reconstruction with Local Mesh Simplification.
J. H. P. Ono (UNESP), A. C. Sementille (UNESP), M. A. C. Caldeira (UNESP),
J. F. Marar (UNESP).
- Sistema de Visão Computacional para Extração Automática de Parâmetros em Ambientes Monitorados.
M. M. Bueno (IFSC), M. E. Stivanello (IFSC), S. Varga (IFSC), E. A. Fedechen
(IFSC).
- Symmetry-based Method for Anomalies Detection on Morphological Neuroimages.
G. C. S. Ruppert (CTI Renato Archer), J. V. L. Silva (CTI Renato Archer),
A. X. Falcão (UNICAMP).
- TRIOS - an open source toolbox for training image operators from samples.
I. S. Montagner (IME-USP), R. Hirata Jr. (IME-USP), N. S. T. Hirata (IME-USP).
- Using Vibrotactile Communication to Assist in Orientation and Locomotion.
V. A. J. Oliveira (UFRGS), A. Maciel (UFRGS).
- Uso de estereoscopia na movimentação autônoma de robôs.
D. M. S. Cardoso (UFG).

Saturday Aug 25th — Afternoon

Uso de técnicas de paralelização em GPGPU e Multirresolução para Suavização de Imagem.

C. A. S. J. Gulo (UNESP), A. C. Sementille (UNESP), A. F. Araújo (Universidade do Porto), J. M. R. S. Tavares (Universidade do Porto).

Video Stitching based on Optical Tracking.

J. G. Grandi (UFRGS), A. Maciel (UFRGS).

Vision Based Navigation of Aerial Drones over The Rain Forest: Extracting and Tracking Natural Landmarks.

F. Pinagé (UFAM), J. R. H. Carvalho (UFAM), J. P. Queiroz Neto (IFAM).

Visualização de Malhas Tubulares em Movimento.

L. F. Silva (UFRJ), R. de Toledo (UFRJ).

Walk in Place Using a Balance Board Matrix.

H. F. Krammes Filho (UFRGS), W. J. Sarmiento (Universidad del Cauca), V. A. Jorge (UFRGS), C. Collazos (Universidad del Cauca), L. Nedel (UFRGS).

Saturday Aug 25th — Night

Closing Session

Chairs: D. Menotti (UFOP) & G. Cámara-Chávez (UFOP) & J. M. R. Neves (UFOP).

Auditorium São João Del Rei - A & B

18:00 - 18:30

Organization



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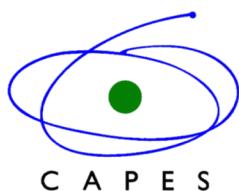


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