

Technical Program

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Message from the Chairmen

Here you can find the program of the XVIII Brazilian Symposium on Computer Graphics and Image Processing (SIBGRAPI 2005), held at Praiamar Hotel, Natal, Rio Grande do Norte, Brazil, one of the most beautiful beach resorts in South America, from October 9-12th, 2005. SIBGRAPI is an event sponsored by the Brazilian Computer Society (SBC), and it is considered the most important Brazilian meeting on Computer Graphics, Image Processing, Computer Vision, and Pattern Recognition research areas. The first edition of SIBGRAPI was organized in 1988, and since 1997, printed proceedings have been published by the IEEE CS Press. The digital version of the Proceedings also includes the accepted papers for the Workshop of Undergraduate Works (Workshop de Iniciação Científica - WIC) and the Workshop of Graduate Works (Workshop de Teses e Dissertações), but it is limited only to participants of SIBGRAPI 2005.

We would like to specially thank Federal University of Rio Grande do Norte (UFRN) - organizer, University of Fortaleza (UNIFOR), Federal University of Alagoas (UFAL), State and Federal Universities of São Carlos, University of São Paulo, Mackenzie University, University of Campinas, and the Brazilian Computer Society (SBC). We thank CNPq, CAPES, FINEP, FAPERN and DIGIZAP for financially supporting the event. We also extend our thanks to the Committees in charge of each contribution category and the reviewers for helping to maintain. Finally we thank all authors and all participants for the great success of the conference.

We hope that SIBGRAPI 2005 and Natal have brought knowledge, a bit of rest, and fun to all participants.

Natal, Brazil, October 9-12, 2005

Luiz Marcos Gonçalves
General Chair of SIBGRAPI

Bruno Motta de Carvalho
Organizing Co-chair

Agostinho de Medeiros Brito Júnior
Organizing Co-chair

SIBGRAPI 2005 Program

Time	09/10/05	Time	10/10/05	Time	11/10/05	12/10/05
9:00-10:30	T1/T2/T3	9:00-10:30	WIC1/WIC2/ WTD1	9:00-10:30	WTD3/WTD4	
10:30-11:00	Coffee Break	10:30-11:00	Coffee Break	10:30-11:00	Coffee Break	Coffee Break
11:00-12:30	T1/T2/T3	11:00-12:30	WIC3/WIC4/ WTD2	11:00-12:30	WTD5	
14:30-16:00	T1/T4/T5	13:45-14:45	IT1	13:45-14:45	IT3	IT4
16:00-16:30	Coffee Break	15:00-17:00	TS1/TS2	15:00-17:00	TS3/TS4	TS7/TS8
16:30-18:00	T1/T4/T5	17:00-18:00	Coffee Break/ WIC Poster Session	17:00-18:00	Coffee Break/ WTD Poster Session	Coffee Break/ SIBGRAPI Poster Session
		18:00-19:00	IT2	18:00-20:00	TS5/TS6	TS9/TS10
		19:00-21:00	Plenary	20:00-21:00	Video Festival	
		21:00-23:00	Cocktail	21:00-24:00	Banquet	

INVITED TALKS

IT1 Markerless Motion Capture

IT2 Enhancing the Topology Control of Snakes and T-Surfaces

IT3 Vibro-acoustography and Vibrometry for Imaging and Measurement of Biological Tissues

IT4 Differential Coordinates and Least-Squares Meshes

TUTORIALS

T1 Cenários 3D Interativos com Software Livre

T2 Optical Motion Capture: Theory and Implementation

T3 GPU-Based Volume Rendering of Unstructured Grids

T4 Markov Random Fields for Vision and Graphics

T5 Artificial Life for Virtual Creatures: What Lies Beneath?

TECHNICAL SESSIONS

TS1 - Medical Imaging

TS2 - 3D Imaging & Volume Rendering

TS3 - Mathematical Morphology

TS4 - Animation, Simulation and Non-photorealistic Rendering

TS5 - Pattern Recognition

TS6 - Image Analysis I

TS7 - Image Analysis II

TS8 - Geometric & Solid Modelling

TS9 - Image-Based Techniques

TS10 - Image Processing

Tutorials

T1 Cenários 3D Interativos com Software Livre

Liliane dos Santos Machado, Ronei Marcos de Moraes (UFPB, Brazil)

In recent years, interactive graphical applications have gained considerable attention with the games. In fact, games are only one kind of computer graphics application. With the technological evolution and the emergence of the virtual reality, graphics systems have becoming more realistic. In this context, there is great interest in the creation of three-dimensional scenes using free software that can be visualized in 3D. This tutorial presents the steps for the development of interactive 3D applications with OpenGL and GLUT. OpenGL is an application-programming interface (API) composed by commands to specify objects and operations to create 2D and 3D graphical applications. Due its functionalities, OpenGL became a standard adopted by industry in the development of graphics, and it is implemented in most of video cards. GLUT (OpenGL Utility Toolkit) is a set of tools to develop programs based on OpenGL. It provides a way to write OpenGL programs, without the complexity entailed by the details of the native window system APIs. Because the GLUT library source code is freely available, it is a valuable resource for learning OpenGL.

All code and examples to be presented were developed with free software using the KLabteve, a Kurumin Linux remaster, developed by the Laboratory of Technologies for Virtual Learning and Statistics (LabTEVE) at the Federal University of Paraíba. This Linux remaster contains all free tools necessary to create graphical applications, including 2D and 3D modeling, image editing, programming languages and graphical libraries.

Starting from objects modeling with the Blender software will be generated three-dimensional objects. At this point it will be discussed file contents for 3D models and how these models can be integrated to a C language code to create 3D scenes. After that, methods to project the scenes in 3D and the devices necessary to the stereoscopic visualization will be presented.

Finally, will be discussed how to integrate interactivity to the applications by mouse or keyboard and how to provide some realism to the scenes using illumination models.

T2 Optical Motion Capture: Theory and Implementation

Gutemberg Guerra-Filho (CVL/CAR/University of Maryland, EUA)

Motion capture is the process of recording real life movement of a subject as sequences of Cartesian coordinates in 3D space. Optical motion capture (OMC) uses cameras to reconstruct the body posture of the performer. One approach employs a set of multiple synchronized cameras to capture markers placed in strategic locations on the body. A motion capture system has applications in computer graphics for character animation, in virtual reality for human control-interface, and in video games for realistic simulation of human motion. In this tutorial, we discuss the theoretical and empirical aspects of an optical motion capture system. Basically, for a motion capture system implementation, the resources required consist of a number of synchronized cameras, an image acquisition system, a capturing area, and a special suit with markers. The locations of the markers on the suit are designed such that the required body parts (e.g. joints) are covered.

We present our motion capture system using a framework that identifies different sub-problems to be solved in a modular way. Therefore, we propose a Matlab toolbox for Optical Motion Capture where each module version may be implemented in order to consider different constraints. The sub-problems involved in OMC are initialization, marker detection, spatial correspondence, temporal correspondence, and post-processing. In this tutorial, we discuss the theory involved in each sub-problem and the corresponding novel techniques used in the current implementation. The initialization consists in setting up an anthropomorphic human model and in the computation of intrinsic and extrinsic camera calibration. Marker detection involves finding the 2D pixel coordinates of markers in the images. The spatial correspondence problem consists in finding pairs of detected markers in different images captured at the same time with different viewpoints such that each pair corresponds to the projections of the same scene point. Given camera calibration and the spatial matching, the 3D reconstruction of markers (translational data) is achieved by triangulating the various camera views.

The temporal correspondence problem (tracking) involves matching two clouds of 3D points representing detected markers at two consecutive frames, respectively. The temporal correspondence module builds a track for each marker where the marker's 3D coordinates are concatenated according to time. Post-processing consists in labeling each track with a marker code, filling track gaps caused by occlusions, correcting possible gross errors, filtering or smoothing noise, and interpolating data along time. Other important techniques used to improve consistency in the motion data are volumetric reconstruction, inverse kinematics, and inverse dynamics. Once the translational data is processed, a hierarchical human model may be used to compute rotational data (joint angles). We consider standard data formats available for motion capture data (e.g. bvh, acclaim) and cover topics related to editing and manipulation of motion data.

Further information: <http://www.cs.umd.edu/~guerra/OptMoCap.html>

T3 GPU-Based Volume Rendering of Unstructured Grids

João Luiz Dohl Comba, Fábio F. Bernardon (UFRGS, Brazil)

Claudio T. Silva, Steven P. Callahan (SCII/ University of Utah, EUA)

Harvesting the power of special-purpose Graphics Processing Units (GPUs) to produce real-time volume rendering of large unstructured meshes is a major research goal in the scientific visualization community. While, for regular grids, texture-based techniques are well-suited for current GPUs, the steps necessary for rendering unstructured meshes are not so easily mapped to current hardware.

In this tutorial we review state-of-the-art volume rendering techniques for unstructured grids that simplifies the CPU-based processing and shifts much of the processing burden to the GPU, where it can be performed more efficiently. The presentation focus on two different techniques to solve this problem using object and image space approaches. For each technique we review its fundamental ideas, describe its GPU implementation and discuss the results.

The first algorithm we review is called Hardware-Assisted Visibility Sorting (HAVS). It is a hybrid technique that operates in both object-space and image-space. In object-space, the algorithm performs a partial sort of the 3D primitives in preparation for rasterization. The goal of the partial sort is to create a list of primitives that generate fragments in nearly sorted order. In image-space, the fragment stream is incrementally sorted using a fixed-depth sorting network. In this algorithm, the object-space work is performed by the CPU and the fragment-level sorting is done completely on the GPU. Results that will be discussed demonstrates that the fragment-level sorting achieves rendering rates of between one and six million tetrahedral cells per second on an ATI Radeon 9800.

The second algorithm to be discussed is called GPU-based Ray Casting. Computation is entirely performed in the GPU by advancing intersections against the mesh while evaluating the volume rendering integral, with an efficient and compact representation for mesh data in 2D textures. In addition, a tile-based subdivision of the screen allows computation to proceed only at places where it is required, thus reducing fragment processing in the GPU. Finally, a depth-peeling approach that captures when rays re-enter the mesh is described, which is much more general and does not require a convexification algorithm. This technique can render true non-convex meshes, such as the Blunt Fin, in between 400~Ktet/sec to 1.3~Mtet/sec.

To complement the presentation of the two algorithms described above, we discuss extensions that allows handling even larger meshes using a new level-of-detail approach, and a vector quantization solution that compress time-varying scalar fields is a suitable format that allows interactive exploration.

T4 Markov Random Fields for Vision and Graphics

Philip H. S. Torr (CVG/DC/Oxford, UK)

This tutorial will give a description of Markov Random Fields (MRFs) and their applications to image and video editing and segmentation, recovery of dense stereo, texture synthesis and object recognition. The tutorial will assume no prior knowledge and will introduce the concept of MRFs from a Bayesian perspective. For each of the above applications the formulation of the Markov random field will be described. The main focus of the tutorial will be on state of the art methods for estimating MRFs; in contrast to the rather inefficient "old style" stochastic methods characterized by simulated annealing a new class of deterministic methods has recently provided effective estimators, amongst these are graph cuts, and loopy belief propagation. These deterministic algorithms will be described in detail. A breakdown of the course is as follows:

1. Introduction, Bayesian methods in vision, pros and cons.
2. Shortest paths, dynamic programming (borrowing from the material of the ICCV tutorial I did with Yuri Boykov and Ramin Zabih). This part will discuss the relationship between the Bayesian method, dynamic programming (DP), shortest path and hidden markov models,
 - (a) Solution for snakes Amini, Weymouth, Jain, Using DP for Solving Variational Problems in Vision, PAMI 1990; (b) DP in vision: Scan-line stereo, Ohta & Kanade, 1985 Cox, Hingorani, Rao, 1996; (c) Object extraction live-wire [Falcao, Udupa, Samarasekera, Sharma 1998] intelligent scissors [Mortensen, Barrett 1998]; (d) Texture Synthesis Efros & Freeman, 2001.
3. Markov Chains, and HMM, This part will discuss the relationship between the Bayesian method, dynamic programming (DP), shortest path and hidden markov models, covering:
 - (a) inference: - MAP by Dynamic Programming, Forward and Forward-Backward (FB) algorithms; (b) learning: by EM and Baum-Welch; (c) representations: pixels, patches; (d) applications: stereo vision
4. Introduction to MRFs, formulation in various problems:
 - (a) segmentation, (b) object extraction, (c) stereo, motion, (d) image restoration, (e) pattern recognition, (f) shape reconstruction, (g) object matching/recognition, (h) augmented reality, (i) texture synthesis,
5. MRFs how to optimize them:
 - (a) Inference: within this section I will also discuss some of my own recent contribution to this field: i. ICM, ii. Loopy Belief Propagation (BP), iii. Generalised BP, iv. Graph Cuts; (b) Parameter learning: Pseudolikelihood maximization; (c) representations: color pixels, patches; (d) and furthermore: Gibbs sampling, Discriminative Random Field (DRF)

T5 Artificial Life for Virtual Creatures: What Lies Beneath?

Marcio Lobo Netto, Marcos Antonio Cavalhieri, Luciene Cristina Rinaldi Rodrigues (CSRG/PUC-SP)

The main goal of this tutorial is to introduce general artificial life concepts, and to present some deeper details on those aspects that may be of interest for the computer graphics community, particularly to those people involved with the design of virtual characters or with computer animation.

The tutorial intends to motivate new researches in this area. It provides an overview of this field, starting with analysis of life concepts, aiming to provide the support required to propose mathematical models that can reproduce life aspects appropriately in computer simulations. Then, it presents different approaches used to study different aspects of life, from very simple unicellular beings, to more complex multi-cellular ones, containing a large variety of functions and specific organs. Virtual creatures can be developed and used in a large diversity of scenarios, and for each of them different simulation approaches may apply. Therefore this tutorial uses some case studies to describe how these approaches can be effectively used on these different scenarios. For instance, we can be interested, as scientists, on the observation of the evolution of virtual creatures representing beings from some species, studying their evolution, adaptation capacity, and so for. Or we may be interested, as graphic animators, on the production of real looking and behaving virtual creatures that play their act based on some movie script. The tutorial presents diverse perspectives to analyze and to design virtual beings, describing their internal architectures and external social relationships. The final results emerge from the dynamics associated to these models, and are strongly dependent from adaptive concepts. We introduce some models to represent the subsystems contained in these simulations, showing how they can evolve and adapt, and the emergence of nice natural features, recognizable as similar to those found in live-systems.

Behavioral and cognitive animation can provide an efficient framework and tools to develop virtual creatures. Therefore we will present some techniques and concepts that can be used to implement these features, providing the virtual actors with the required capacity to decide how to play their role, or how to react in different circumstances. We are interested to show how these concepts and techniques can be applied in order to provide means to support auto adaptation, based on strategies as genetic evolution and learning. We also discuss how mental models can be built to describe the personal vision of the world, and how to use basic language structures to communicate knowledge and as basis for reasoning and decision taking.

Invited Talks

IT1 Markerless Motion Capture

Rick Parent (Ohio state University, USA)

Monday (10/09/05), 13:45-14:45 – Jacarandá Auditorium

Motion capture is a popular tool for computer animation, especially for animating the human figure. Motion capture, or mocap as it is more popularly called, requires that the person whose motion is being captured is outfitted with some type of active sensors or passive markers in order for the system to record movement. The positions of these sensors or markers are used to compute the positions of the joints. The joint positions are then used to reconstruct the joint angles over time. These joint angles can then be used with an appropriately configured skeleton to animate a synthetic figure. The problem with conventional motion capture is that it requires expensive equipment, requires extensive set-up and initialization, needs a conditioned environment and is restrictive of the motion being captured. An active area of research is concerned with developing techniques for capturing the motion of a human figure without the instrumentation required by traditional mocap systems. Various approaches have been tried with limited but interesting results. The approaches differ in a number of ways, among them: reconstruction of motion in two dimensions versus three dimensions, use of a single camera versus multiple cameras, use of extracted silhouettes versus use of color and texture, use of limiting assumptions about the motion being tracked, use of knowledge of anatomy and physics, robustness, and responsiveness. I will survey some of these approaches, presenting some results and discussing trade-offs. Our own work, which is a single-camera, extracted silhouette, model-based, 3D approach will be presented. This area of research represents an interesting blend of vision and computer graphics.

IT2 Enhancing the Topology Control of Snakes and T-Surfaces

Antônio Oliveira (UFRJ, Brazil)

Monday (10/09/05), 18:00-19:00 – Jacarandá Auditorium

Consider a set of simple polygonal curves, disjoint to each other, evolving in the plane by discrete steps. If necessary, after each step, simplicity is recovered by means of splits and disjunction by a merge, when two of them collide.

Implementing the evolution of such curves in an efficient way, requires embedding them into a framework which partitions the plane into cells and redefining the curves so that they do not have an unbounded number of vertices in a same cell.

Topologically Adaptable Snakes (T-snakes), which have been created to segment images with multiple objects, evolve like the curves of the system above. The standard form of enabling these snakes to make topological changes is to consider the union of their contours as a level set of a step dependent function. An alternative approach reduces the time lag, so that, at each step, a snake reaches a single new cell vertex.

In the Loop-snakes model, the snakes move in a way that each region which has not been visited by them is delimited by a loop contained in regularized approximations of the contours where the snakes are positioned after a motion step. These loops, which are taken as the snakes of the next step - must be distinguished from those defining doubly visited regions. This can be done in constant time at the very moment the loop is created. The whole process can be implemented by examining only the contours, without the need of considering their surroundings. In addition, the curves of a step need to be traversed only once. Moreover, as the processing essentially requires only data produced at the current step, it is easier to refine the cells mesh during the process, revert the evolution direction of a snake and incorporate the structure used to control the topology into the representation of the curves. All these desirable properties have a price. Topological changes get more complicated. However, as the number of these changes is usually irrelevant, compared to that of snaxels, this fact affects slightly the performance of the process.

Bubble T-surfaces are the 3D version of Loop-snakes. The case of a single contracting T-surface, has been studied with more details. If the faces of the moving surfaces are updated in breadth first order it is easier to obtain their bubble structure. That structure corresponds in the 3D case to the loop tree of a planar curve. Different regularization approaches have been tried and new questions like preventing the unnecessary creation of genus are treated.

IT3 Vibro-acoustography and Vibrometry for Imaging and Measurement of Biological Tissues

James Greenleaf (Mayo Clinic College of Medicine, USA)
Tuesday (11/09/05), 13:45-14:45 – Jacarandá Auditorium

Vibro-acoustography is a method of imaging and measurement that uses ultrasound to produce radiation force to vibrate objects. The radiation force is concentrated laterally by focusing the ultrasound beam. The radiation force is limited in depth by intersecting two beams at different frequencies, producing interference between the beams at the difference frequency only at their intersection. This results in a radiation stress of limited spatial extent on or within the object of interest. The resulting harmonic displacement of the object is detected by acoustic emission, ultrasound Doppler, or laser interferometry. The displacement is a complicated function of the object material parameters. However, significant images (Vibro-acoustography) and regional measurements (Vibrometry) can be made with this arrangement. Vibro-acoustography can produce high-resolution, speckle free images of biologically relevant objects such as breast micro-calcification and lesions, vessel calcifications, heart valves, and normal and calcified arteries. Vibrometry can also make spot measurements such as detection of micro bubble contrast agent concentration in vessels. Several examples of these results will be described.

IT4 Differential Coordinates and Least-Squares Meshes

Daniel Cohen-Or (Tel Aviv University, Israel)
Wednesday (12/09/05), 13:45-14:45 – Jacarandá Auditorium

Representing surfaces in local, rather than global, coordinate systems proves to be useful for various geometry processing applications. In particular, we have been investigating surface representations based on differential coordinates, constructed using the Laplacian operator. Unlike global Cartesian coordinates, that only represent the spatial locations of points on the surface, differential coordinates capture the local surface details which greatly affect the shading of the surface and thus its visual appearance. On polygonal meshes, differential coordinates and the discrete mesh Laplacian operator provide an efficient linear surface reconstruction framework suitable for various mesh processing tasks. In my talk I will discuss the important properties of differential coordinates and show their applications for surface reconstruction. In particular, I will discuss the Least-squares meshes and show some results of details-transfer and surface completion.

Sunday, October 09, 2005

9:00 – 10:30

Tutorial 1 (Jacarandá 1)

Cenários 3D Interativos com Software Livre

Liliane dos Santos Machado, Ronei Marcos de Moraes

Tutorial 2 (Jacarandá 2)

Optical motion Capture: Theory and Implementation

Gutemberg Guerra-Filho

Tutorial 3 (Jacarandá 3)

GPU-Based Volume Rendering of Unstructured Grids

João Luiz Dohl Comba, Claudio T. Silva, Fábio F. Bernardon, Steven P. Callahan

10:30 – 11:00 Coffee Break (Hall)

11:00 – 12:30

Tutorial 1 (Jacarandá 1)

Cenários 3D Interativos com Software Livre

Liliane dos Santos Machado, Ronei Marcos de Moraes

Tutorial 2 (Jacarandá 2)

Optical motion Capture: Theory and Implementation

Gutemberg Guerra-Filho

Tutorial 3 (Jacarandá 3)

GPU-Based Volume Rendering of Unstructured Grids

João Luiz Dohl Comba, Claudio T. Silva, Fábio F. Bernardon, Steven P. Callahan

14:30 – 16:00

Tutorial 1 (Jacarandá 1)

Cenários 3D Interativos com Software Livre

Liliane dos Santos Machado, Ronei Marcos de Moraes

Tutorial 4 (Jacarandá 2)

Markov Random Fields for Vision and Graphics

Philip H. S. Torr

Tutorial 5 (Jacarandá 3)

Artificial Life for Virtual Creatures: What Lies Beneath?

Marcio Lobo Netto, Marcos Antonio Cavalhieri, Luciene Cristina Rinaldi Rodrigues

16:00 – 16:30 Coffee Break (Hall)

16:30 – 18:00

Tutorial 1 (Jacarandá 1)

Cenários 3D Interativos com Software Livre

Liliane dos Santos Machado, Ronei Marcos de Moraes

Tutorial 4 (Jacarandá 2)

Markov Random Fields for Vision and Graphics

Philip H. S. Torr

Tutorial 5 (Jacarandá 3)

Artificial Life for Virtual Creatures: What Lies Beneath?

Marcio Lobo Netto, Marcos Antonio Cavalhieri, Luciene Cristina Rinaldi Rodrigues

Monday, October 10, 2005

9:00 – 10:30 WIC Sessão 1 (Jacarandá 1) Geometria Computacional e Modelagem Geométrica Chair: *Marcelo da Silva Hounsell (UDESC)*

Ambientes Interativos com Detecção de Colisão Broad Phase Utilizando Grids
Rafael Rocha, Maria Andréia Rodrigues

Avaliação do Cálculo de Distâncias para Funções RBF na Interpolação de Campos Vetoriais em Malhas Poligonais Tridimensionais
Vinicius Mello, Marcelo Walter

Detecção Hierárquica de Colisão em Ambientes 3D
Fabio Nakamura, Waldemar Celes

Geração de um Modelo Tridimensional de Canais Encontrados em Reservatórios Petrolíferos
Jefferson Santos, Carlos Eduardo Araujo, Rosana Marques da Silva

Construção de Mapas de Inclinação a partir de Imagens com Diferentes Iluminações
Rafael Saracchini, Helena Cristina Gama Leitão, Jorge Stolfi

Animação Computacional de Fluidos via Smoothed Particle Hydrodynamics
Algemiro Neto, Gilson Giraldi, Paulo Sérgio Rodrigues, Antônio L. Apolinário, Adilson Xavier

9:00 – 10:30 WIC Sessão 2 (Jacarandá 2) Processos Básicos de PI, Reconhecimento de Padrões e Reconstrução Chair: *Silvio Jamil F. Guimarães (PUC-MG)*

Automatic Detection of Blood Cells on Color Images using Image Matching and Flood Map
Thiago Figueiró, Nivea Schuch, André Borin, Leticia Guimarães, Altamiro Susin

Aquisição de Modelos 3D por Escaneamento a Laser
Vitor D'Agnoluzzo, Pedro Angelini, Felipe Sanches, Laerte Rosato, Hae Yong Kim

Reconstrução de Modelo 3D a partir de duas Imagens Calibradas
Fernando de Goes, Siome Goldenstein

Segmentação de Imagens Médicas Utilizando Transformadas Wavelets
Ricardo Dutra da Silva, Rodrigo Minetto, Hélio Pedrini

Realce de Imagens Coloridas através da Equalização de Histogramas
André Melo, David Menoti, Arnaldo de Albuquerque Araújo, Ederson Sgarbi, Jacques Facon

Reconhecimento de gestos em Tempo-Real Utilizando uma Rede Neural Artificial de Baixa Complexidade Computacional Para Detecção de Cores
Ticiano Bragatto, Victor Benso, Juliano Sugawara, Marcus Vinicius Lamar

9:00 – 10:30 WTD Sessão 1 (Jacarandá 3) Processamento de Imagens e Visão I Chair: *Luís Augusto Consularo (UNIMEP)*

Redução de Dimensionalidade Utilizando Entropia Condicional Média: Aplicações em Filtragem de Imagens e em Reconhecimento de Texturas
David Martins Jr., Roberto César Jr., Junior Barrera

Combining Multiple Classifiers for Material Identification on Noisy Images
Moacir Ponti Jr., Nelson Mascarenhas

Segmentação de Vídeo no Domínio Comprimido Baseada na História da Codificação
Cristina Vasconcelos, Bruno Feijó, Dilza Szwarcman

A Computer Vision Application that Uses Hand Gestures to Interact with Computers on no Controlled Environments
Michel Alain Quintana Truyenque, Marcelo Gattass, Anselmo Montenegro

A Methodology Gabor Filter-Based for Fingerprint Identification
Sanderson Oliveira, Joaquim Teixeira de Assis

11:00 – 12:30 WIC Sessão 3 (Jacarandá 1) Aplicações de PI e Visão Computacional Chair: *Bruno M. Carvalho (UFRN)*

Hole Filling in Digital Images - Preenchendo Lacunas em Imagens Digitais
Djeisson Rober Gomes, André Gustavo dos Santos

Visão Computacional para Rastreamento de Múltiplos Animais em Experimentos de Laboratório: Resultados Preliminares
João Bosco Monteiro, Hemerson Pistori, Albert Souza

Design of a Simplified Codec for the JPEG2000 Standard: the WLT approach
Sérgio Johann Filho, Tatiana dos Santos

Método Semi-Automático para o Estudo do Processo Inflamatório Granulomatoso
Marília Oliveira, Ana Lúcia Candeias, Mário Ribeiro

Visualização da Estrutura Lâmina-Fibra do Tecido Cardíaco obtida por Imagens de Ressonância Magnética
Daniele Oliveira, Leandro Ciuffo, Bernardo Lino de Oliveira, Rodrigo Weber dos Santos

Sistema Automático de Rastreamento para o Labirinto Aquático de Morris
Rafael Souza, Neucimar Leite

11:00 – 12:30 WIC Sessão 4 (Jacarandá 2) Visualização e Interações Chair: *Silvio de Barros Melo (UFPE)*

Cartoon Rendering para Inspeção de Maquetes Eletrônicas de Modelos Industriais
Jeronimo Venetillo, Waldemar Celes

Renderização de Cenas Tridimensionais Não-Fotorealistas Explorando Hardware Programável
Bruno Evangelista, Alessandro Silva, Marcelo Nery, Rosilane Mota

Inserção de Objetos 3D em Sequência de Imagens Reais usando o OpenGL
Charles Barro, Jessé Sacco, Marco Antonio Garcia de Carvalho

Implementação de Estereoscopia de Baixo Custo para Aplicações em Ferramentas de Realidade Virtual para Treinamento Médico
Leonardo Castro Botega, Fatima L. S. Nunes

AR-Hardware - Um modelo de Interatividade em Ambientes de Realidade Aumentada
José Marcos Pilato Júnior, Gilson Giraldi, Rodrigo L. S. Silva

Uma Implementação Híbrida de Raytracing em Processadores Gráficos Programáveis ou Processadores de Propósito Geral
Alessandro Silva, Carlos Augusto Martins

11:00 – 12:30 WTD Sessão 2 (Jacarandá 3)
Computação Gráfica e Visualização I
Chair: Luís Gustavo Nonato (USP)

Multi-Resolution 3D Triangulations for Non-manifold Heterogeneous Objects
Ricardo Marroquim, Paulo Cavalcanti

Busca de Padrões em Subdivisões Planares
Pedro Andrade Neto, André Guedes

Modeling and Visualization of Free-Form Objects using Variational Implicit Surfaces
Álvaro Cuno, Cláudio Esperança

Operações Booleanas na Modelagem por Pontos
Heloisa Leal, Waldemar Celes, Luiz Velho

Síntese de Texturas Que Variam Progressivamente com Abordagem por Blocos de Texels
Leandro Tonietto, Marcelo Walter

13:45 – 14:45 Invited Talk (Jacarandá Auditorium)
Markerless Motion Capture
Rick Parent (Ohio State University, USA)

15:00 – 17:00 Session 1 (Jacarandá 1)
Medical Imaging
Chair: Bruno Carvalho (UFRN)

Image Formation of Multifrequency Vibro-acoustography: Theory and Computational Simulations
Glauber Silva, Matthew Urban

On the Effect of Relaxation in the Convergence and Quality of Statistical Reconstruction for Emission Tomography Using Block-iterative Algorithms
Elias Helou Neto, Alvaro De Pierro

Content-Based Diagnostic Hysteroscopy Summaries for Video Browsing
Wilson Gavião, Jacob Scharcanski, João Filho

True Factor Analysis in Medical Imaging: Dealing with High-Dimensional Spaces
Alexei Machado

Automatic Iris Segmentation Using Active Near Infra Red Lighting
Carlos Morimoto

15:00 – 17:00 Session 2 (Jacarandá 2)
3D Imaging & Volume Rendering
Chair: Maria Cristina F. de Oliveira (USP)

GEncode: Geometry-driven compression in arbitrary dimension and co-dimension
Thomas Lewiner, Marcos Craizer, Helio Lopes, Sinesio Pesco, Luiz Velho, Esdras Medeiros

Tracking and Matching Connected Components from 3D Video
Roberto Cesar Jr., David S. Pires, Marcelo B. Vieira, Luiz Velho

Two-Level Interaction Approach for Transfer Function Specification
João Prauchner, Carla Freitas, João Comba

High-Quality Hardware-Based Ray Casting Volume Rendering
Rodrigo Espinha, Waldemar Celes

Hardware-Assisted Visibility Ordering Technique for Point-Based and Volume Rendering Data
Christian Hofsetz, Nelson Max

17:00 – 18:00 Coffee Break/WIC Poster Session (Hall)
Chair: Maurício Marengoni (UPM)

Visualização do DNA com Mutações Genéticas Utilizando a Realidade Virtual
João Jorge Junior, Isabel Nunes, Cleia R. Baiotto

Tempo Ótimo de Suavização de Imagens Digitais via Equação da Curvatura
Vinícius Pires, Ricardo Assunção, Celia Barcelos

Método Semi-automático para Detecção de Área de Neurônios
Katiane Bezerra, Ana Lúcia Candeias, Mario Ribeiro

Desenvolvimento de Ferramentas para Transmissão de Vídeo e Interface Gráfica para Controle de Robôs no Projeto GIGA-VR
Anderson Abner de S. Souza, Joao Paulo Bezerra, Luiz Marcos M. Gonçalves

Implementação de um Extrator de Características baseado em Momentos da Imagem
Kleber Padovani de Souza, Hemerson Pistori

Percepcon – Um Componente Gráfico Portável para o Desenvolvimento de Ambientes Virtuais Multi-Usuários Colaborativos
Rummenigge Dantas, Aquiles Burlamaqui, Luiz Marcos M. Gonçalves

Seleção de Pontos de Superfícies B-Splines para Manipulação Direta em Modelagem
Leandro Cruz, Luis A. Rivera, Luis Guillermo

Algoritmo Estéreo em Tempo Real para o Módulo de Percepção do Projeto Robosense
Carlos Gustavo Rangel Serrano, Joao Paulo Bezerra, Luiz Marcos M. Gonçalves

Processamento e Análise de Imagens na Plataforma R
Talita Perciano, Alejandro Frery, Rubén Azor Montoya

Modelo de Visão Computacional de Baixo Nível Antropomórfica com Aplicações em Robótica Móvel
Mathias Erdtmann, Christian Emanuel Maourunga Silvano, Marcelo Stemmer

Um Estudo sobre a Animação Tridimensional de Faces
Thales Sehn Körting, Felipe Castro da Silva, Rodrigo Mendes Costa, Sílvia Botelho, Alessandro Bicho

Eliminação de distorção no pré-processamento de imagens do projeto Robosense
Gianna Rodrigues, Ricardo Wendell Rodrigues Silveira, Luiz Marcos G. Gonçalves

Uma Avaliação da Utilização de Dois Diferentes Modelos de Redes Neurais na Classificação de Imagens Baseada em Características de Texturais
Wonder Alexandre Luz Alves, Sidnei Alves de Araújo

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Hole Filling in Digital Images - Preenchendo Lacunas em Imagens Digitais
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Construção de Mapas de Inclinação a partir de imagens com Diferentes Iluminações
Rafael Saracchini, Helena Cristina Gama Leitão, Jorge Stolfi

Visão Computacional para Rastreamento de Múltiplos Animais em Experimentos de Laboratório: Resultados Preliminares
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AR-Hardware - Um modelo de Interatividade em Ambientes de Realidade Aumentada
José Marcos Pilato Júnior, Gilson Giraldi, Rodrigo L. S. Silva

Detecção Hierárquica de Colisão em Ambientes 3D
Fabio Nakamura, Waldemar Celes

Geração de um Modelo Tridimensional de Canais Encontrados em Reservatórios Petrolíferos
Jefferson Santos, Carlos Eduardo Araujo, Rosana Marques da Silva

Implementação de Estereoscopia de Baixo Custo para Aplicações em Ferramentas de Realidade Virtual para Treinamento Médico
Leonardo Castro Botega, Fátima L. S. Nunes

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Jeronimo Venetillo, Waldemar Celes

Reconhecimento de Gestos em Tempo-Real Utilizando uma Rede Neural Artificial de Baixa Complexidade Computacional Para Detecção de Cores
Ticiano Bragatto, Victor Benso, Juliano Sugawara, Marcus Vinicius Lamar

Avaliação do Cálculo de Distâncias para Funções RBF na Interpolação de Campos Vetoriais em Malhas Poligonais Tridimensionais
Vinicius Mello, Marcelo Walter

Ambientes Interativos com Detecção de Colisão Broad Phase Utilizando Grids
Rafael Rocha, Maria Andréia Rodrigues

Renderização de Cenas Tridimensionais Não-Fotorealistas Explorando Hardware Programável
Bruno Evangelista, Alessandro Silva, Marcelo Nery, Rosilane Mota

Visualização da Estrutura Lâmina-Fibra do Tecido Cardíaco obtida por Imagens de Ressonância Magnética
Daniele Oliveira, Leandro Ciuffo, Bernardo Lino de Oliveira, Rodrigo Weber dos Santos

Sistema Automático de Rastreamento para o Labirinto Aquático de Morris
Rafael Souza, Neucimar Leite

Animação Computacional de Fluidos via Smoothed Particle Hydrodynamics
Algemiro Neto, Gilson Giraldi, Paulo Sérgio Rodrigues, Antônio L. Apolinário, Adilson Xavier

18:00 – 19:00 Invited Talk (Jacarandá Auditorium)
Enhancing the Topology Control of Snakes and T-Surfaces
Antônio Oliveira (UFRJ, Brazil)

19:00 – 21:00 Plenária (Jacarandá Auditorium)

21:00 – 23:00 Cocktail (Praiamar Beach)

Tuesday, October 11, 2005

9:00 – 10:30 WTD Sessão 3 (Jacarandá 1)
Processamento de Imagens e Visão II
Chair: Roberto Marcondes César Jr. (USP)

Estimativa da Idade Óssea Através da Análise Carpal Baseada na Simplificação do Método de Eklof & Ringertz
Celso Olivete Júnior, Evandro Luis Linhari Rodrigues

Development of Control Scheme Using Visual Feedback for a Robot Arm
Allan Soares, Pablo Alsina, Adelardo Medeiros

Melhorias para Sistemas de Reconhecimento da Placa de Licenciamento Veicular
Fábio Dias, Roberto Lotufo

An Extensible Automatic Video Browsing Tool
Regis Barbosa, Thiago t. Santos, Filipe C. L. da Silva, Carlos H. Morimoto

Using the 2-D Morlet Wavelet with Supervised Classification for Retinal Vessel Segmentation
João Vitor Soares, Jorge Leandro, Roberto César Jr., Herbert Jelinek, Michael Cree

Um Método para Tratar Arestas Espúrias na Segmentação de Imagens por Transformada Imagem-Floresta
Giuliano Giglio, Helena Cristina da Gama Leitão

9:00 – 10:30 WTD Sessão 4 (Jacarandá 2)
Computação Gráfica e Visualização II
Chair: Rosane Minghim (USP)

Guff: A Game Development Tool
Luis Valente, Aura Conci

Uma Arquitetura para Verificação de Blocos de Computação Gráfica em Hardware
Fabricio Andrade, Antônio Fernandes

Geração Automática de Populações de Personagens Virtuais
Andre Tavares, Soraia Musse

Modelagem e Visualização de Estruturas Fetais utilizando Ferramentas Gratuitas
Lígia Hermosilla, Fatima L. S. Nunes

VRVis: Ferramenta de Realidade Virtual para Visualização de Informações
Claudia Berti, Fátima L. S. Nunes

Modelo de Comportamento baseado em Crenças e Teoria Bayesiana para Simulações de Vida Artificial com Humanos Virtuais
Marcos Cavallieri, Marcio Netto

11:00 – 12:30 WTD Sessão 5 (Jacarandá 1)
Teses de Doutorado
Chair: Roberto Lotufo (UNICAMP)

A Topological Approach for Surface Reconstruction from Sample Points
Helton Biscaro, Antônio Castelo, Luís Gustavo Nonato, Maria Cristina Ferreira de Oliveira

Computing the Attenuation and the Activity in *Emission Tomography from Activity Data*
Fabiana Crepaldi, Álvaro de Pierro

Lymphocytic Leukemia under Machine Vision
Daniela Ushizima, Luciano Costa, Marco Antonio Zago

Análise e Classificação de Formas Biológicas
Renata Arantes, Luciano Costa

Métodos Auto-organizáveis para Segmentação de Imagens
Patrícia Oliveira, Roseli A. F. Romero

13:45 – 14:45 Invited Talk (Jacarandá Auditorium)
Vibro-acoustography and Vibrometry for Imaging and Measurement of Biological Tissues
James Greenleaf (Mayo Clinic, USA)

15:00 – 17:00 Session 3 (Jacarandá 1)
Mathematical Morphology
Chair: Alexandre Falcão (UNICAMP)

Curvature Motion for Union of Balls
Thomas Lewiner, Cynthia O.L. Ferreira, Marcos Craizer, Ralph Teixeira

Tie-Zone Watershed, Bottlenecks and Segmentation Robustness Analysis
Romarc Audigier, Roberto Lotufo

Binary Image Operator Design based on Stacked Generalization
Nina Hirata

A Maximum-likelihood Approach for Multiresolution W-operator Design
Daniel Vaquero, Junior Barrera, Roberto Hirata Jr.

A Brief Account of the Relations between Gray-Scale Mathematical Morphologies
Peter Sussner, Marcos Eduardo Valle

15:00 – 17:00 Session 4 (Jacarandá 2)

Animation, Simulation and Non-photorealistic Rendering

Chair: Marcelo Walter (UNISINOS)

A Collision Detection and Response Scheme for Simplified Physically Based Animation

Yalmar Atencio, Claudio Esperança, Paulo Cavalcanti, Antonio Alberto Fernandes de Oliveira

Incorporating Biomechanics into Architectural Tree Models

Julia Taylor-Hell

An image-based shading pipeline for 2D animation

Hedlena Maria Bezerra, Bruno Feijó, Luiz Velho

Simple Adaptive Mosaic Effects

Geisa Faustino, Luiz Henrique de Figueiredo

17:00 – 18:00 Coffee Break/WTD Poster Session (Hall)

Processamento de Imagens com Equações Diferenciais Parciais

Carolina Ferraz, José Cuminato

Lattice Gas Cellular Automata for Computational Fluid Animation

Adilson Xavier, Gilson Giraldo, Paulo Rodrigues, Antonio L. Apolinário, Algemiro Neto

Controle Imersivo Colaborativo de Uma Plataforma Robótica Móvel Via Internet

João Paulo Bezerra, Luiz Gonçalves, Aquiles Burlamaqui

Construção de Atlas de Anatomia e Fisiopatologia do Câncer de Mama utilizando Realidade Virtual

Fábio Montanha, Fatima L. S. Nunes, Leonardo Castro Botega, José Júnior, Eduardo Damasceno

A Modified TV Approach for Digital Image Inpainting

Mylene Rodrigues, Marcio Ferreira, Celia Barcelos, Maurilio Boaventura

Aplicação de Blending em Múltiplas Resoluções para Mosaico de Imagens de Sensoriamento Remoto

Vantier Veronezi Bagli, Leila Fonseca

Cascadeamento de NLPCAs aplicado em imagens sintéticas e de TSM

Matheus Figueiredo, Silvia Botelho, Tania Centeno, William Lautenschläger

Ambientes Virtuais Colaborativos para Dispositivos Móveis

Rafael Barbosa, Maria Andréia Rodrigues, Nabor C. Mendonça

Metodologia de Estimação de Movimento Global de Seqüências de Vídeo Utilizando

Movimentos Locais de Pontos Característicos entre Quadros

Marcos Pinto, Eduardo Ribeiro, Marcus Vinicius Lamar

Learning Based Super-Resolution Using YUV Model for Remote Sensing Images

Cléber Rubert, Leila Fonseca, Luis Velho

An Intelligent System for Detection and Analysis of Skin Cancer based on Wavelet Transform and Support Vector Machine

Heliana Bezerra Soares, Adrião Duarte Dória Neto, Marco Antonio Garcia de Carvalho

18:00 – 20:00 Session 5 (Jacarandá 1)

Pattern Recognition

Chair: Nivando Bezerra (UNIFOR)

A Maximum Uncertainty LDA-based approach for Limited Sample Size problems with application to Face Recognition

Carlos Thomaz, Duncan Gillies

Object detection by kappa-connected seed competition

Alexandre Falcao, Paulo Miranda, Anderson Rocha, Felipe Bergo

Combining Methods to Stabilize and Increase Performance of Neural Network-Based Classifiers

Fabricio Breve, Moacir Ponti Jr., Nelson Mascarenhas

Ridge-Based Fingerprint Matching Using Hough Transform

Aparecido Nilceu Marana, Anil Jain

A Linear Algorithm for Exact Pattern Matching in Planar Subdivisions

Pedro Andrade Neto, André Guedes

18:00 – 20:00 Session 6 (Jacarandá 1)

Image Analysis I

Chair: Nelson Mascarenhas (UFSCar)

Determining the appropriate feature set for fish classification tasks

Marcelo Nery, Mario Campos, Flávio Pádua, José Queiroz-Neto, Alexei Machado, Rodrigo Carceroni

Linear Complexity Stereo Matching Based on Region Indexing

Marco Antonio Floriano de Oliveira, Raul Sidnei Wazlawick

Background Subtraction and Shadow Detection in Grayscale Video Sequences

Julio Jacques, Claudio Jung, Soraia Musse

Polarimetric SAR Region Boundary Detection using B-spline Deformable Countours under the GH Model

Juliana Gambini, Marta Mejail, Julio Jacobo, Alejandro Frery

Quadtree-based Inexact Graph Matching for Image Analysis

Roberto Cesar Jr., Luis Augusto Consularo

20:00 – 21:00 Video Festival (Jacarandá Auditorium)

21:00 – 24:00 Banquet (Terrace)

Wednesday, October 12, 2005

13:45 – 14:45 Invited Talk (Jacarandá Auditorium)
Differential Coordinates and Least-Squares Meshes
Daniel Cohen-Or (Tel Aviv University, Israel)

15:00 – 17:00 Session 7 (Jacarandá 1)
Image Analysis II
Chair: José Torreão (UFF)

An Improved Linear-Parabolic Model for Lane Following and Curve Detection
Claudio Jung, Christian Kelber

TSD: A shape descriptor based on a distribution of tensor scale local orientation
Paulo Miranda, Ricardo Torres, Alexandre Falcao

Performance Analysis of Oriented Feature Detectors
Fabio Ayres, Rangaraj Rangayyan

Computing Box Dimensions from Single Perspective Images in Real Time
Leandro Fernandes, Manuel M. Oliveira Neto, Roberto Da Silva, Gustavo J. Crespo

Document Reconstruction Based on Feature Matching
Carlos Solana, Edson Justino, Luiz Oliveira, Flávio Bortolozzi

15:00 – 17:00 Session 8 (Jacarandá 2)
Geometric & Solid Modelling
Chair: Luiz Henrique de Figueiredo (IMPA)

Boolean Operations on Surfel-Bounded Objects using Constrained BSP-Trees
Marcus Aurelius Cordenunsi Farias, Carlos Scheidegger, João Comba, Luiz Velho

A Calligraphic interface for interactive free-form modeling with large datasets
Bruno De Araujo, Joaquim Jorge

Imesh: An Image Based Quality Mesh Generation Technique
Alex Cuadros-Vargas, Luis Gustavo Nonato, Rosane Minghim, Tiago Etienne

CHF: A scalable Topological Data Structure for Tetrahedral Meshes
Marcos Lage, Thomas Lewiner, Helio Lopes, Luiz Velho

17:00 – 18:00 Coffee Break/SIBGRAPI05 Poster Session (Hall)

3D Reconstruction of Free-Form Objects from Range Images Acquired by Laser Scanning
Landecir Alves Albuquerque, Jose Motta

A face detector using Neural Networks and Discrete wavelet Transforms
Ines Boaventura, Valéria Volpe, André Sanches, Adilson Gonzaga

A New Approach to determine the Foot Classification based on Footprint Spatial Area
Leonardo Rocha, Juliana Dias, William Belangero

A Novel Algorithm for Active Contour Models
Anderson Santana

Acquisition and Image Processing System for Digital Dermatoscopy
Thiago Figueiró, Nivea Schuch, Viviane Cordeiro, Leticia Guimarães, Altamiro Susin

An Integrated Tool for Numerical Weather Models and Environmental Information Visualization
Cicero Augusto Zandoná, Sérgio Scheer, Cesar Beneti, Fábio Sato

Automatic clusters to face recognition
Anderson Rodrigo dos Santos, Adilson Gonzaga

Bone Imaging Using Tone-Burst Vibro-acoustography and Pulse Echo Ultrasound: A Qualitative Comparative Study
Farid Mitri

Classification of Elements in an 3D Urban Virtual Environment
Juliana Denipote, Rodrigo Assaf

Comparison of the virtual environment Implementation with Services of speaks
Eduardo Damasceno, José Remo F. Brega

Computer Vision Guidance in Medical Applications
Daniela Trevisan

Content Based Image Retrieval using color auto-correlograms in HSV color space
Robson Barcellos, Rogerio Saranz, Luciana Lorenzi, Adilson Gonzaga

Data Clustering Analysis using Self-Organizing Maps with 3-D Output Grids
Jose Costa

Data Reduction for Great Variability Images in a Temporal Analysis
Mára Regina da Silva

E-learning in Medical Diagnosis
Daniela Ushizima, Marta Rosatelli

Extrapolation of Spetrum for Signal and Image Restoration
Moacir Ponti Jr., Nelson Mascarenhas, Claudio Suazo

Features Extraction from a 3D Morphological Structure using Wavelets
Silvia Pinto

Fourier Transform Graphical Analysis: an Approach for Digital Image Processing
Mára Regina da Silva, Paulo Souza

Gabor Filter Allied in Supervised Classification of Remote Sensing Images
Ana Carolina Gracioso, Ana Cláudia Paris, Fábio Fernando Silva, Renata de Freitas Góes

Hand Geometry Feature Extraction Through Curvature Profile Analysis
Guilherme Boreki, Alessandro Zimmer

Image Restoration Using Non-Decimated Wavelet Transform and Row-Action Projections
Joao Paulo Papa

Interactive Shader Development Using Python Scripts
Florian Mannuss, Andre Hinkenjann

Low Cost Image Acquisition System for Optical Microscopy
Thiago Figueiró, Nivea Schuch, Francisco Socal, Leticia Guimarães, Altamiro Susin

Mining and Visualization of Logs of Bioinformatics Web Services in silico Experiments
Sergio Manuel Serra da Cruz

Motion Capture Animation for Physical Model Analysis
Leopoldo França, Veronica Teichrieb, Sérgio Galdino, Judith Kelner

Neutral Facial Image Recognition Using Parallel Hopfield Neural Networks
Evandro Alves Silva, Adilson Gonzaga, Fabiana Bertoni, Kelton Costa, Luciana Albuquerque

People detection in still images based on a skin filter and body part evidence
Claudio Cavalcanti

Photogenic Expression Recognition using Gabor Filters and Support Vector Machines
Luana Batista

Preliminary Study of Extraction of Facial Geometric Measures as Features for Content-Based Retrieval
André Oriani, Jander Moreira

Prototype Image Constraints Using Modified Inverse Filter for CBERS-2 Satellite Image Restoration
Nelson Mascarenhas

Quantitative Microscopy Applied to Cytology and Material Microstructure
Daniela Ushizima, Hermes Senger, Marcos Cordeiro d'Ornellas, Fátima Medeiros

Supporting the Online Community of Computer Graphics Educators
Frederico Figueiredo, Joaquim Jorge

X3DPROT: ATool for Distributed 3D Protein Structure Visualization and Manipulation
Marcos Bonfadini

18:00 – 20:00 Session 9 (Jacarandá 1)
Image-Based Techniques
Chair: Luiz Marcos G. Gonçalves (UFRN)

Analytic Antialiasing for Selective High Fidelity Rendering
Peter Longhurst, Kurt Debattista, Richard Gillibrand, Alan Chalmers

Particle Filter-based Predictive Tracking for Robust Fish Counting
Erikson Morais, Mario Campos, Flávio Pádua, Rodrigo Carceroni

Component-Based Adaptive Sampling
Kurt Debattista, Alan Chalmers

Patch-Based Texture Synthesis using Wavelets
Leandro Tonietto, Marcelo Walter, Claudio Jung

Reduction of Interband Correlation for Landsat Image Compression
Daniel Acevedo, Ana Ruedin

18:00 – 20:00 Session 10 (Jacarandá 2)
Image Processing
Chair: Glauber T. Silva (UFAL)

Reconstruction-Diffusion: An Improved Maximum Entropy Reconstruction Algorithm Based on the Robust Anisotropic Diffusion
Harold Bustos, Hae Yong Kim

A Hybrid Estimation Theoretic-POCS Method for Tomographic Image Reconstruction
Fernando Salina, Nelson Mascarenhas

A RBFN Perceptive Model for Image Thresholding
Fabrcio Lopes, Luís Augusto Consularo

Automatic Face Recognition System Based on Local Fourier-Bessel Feature
Yossi Zana, Roberto Cesar-Jr, Regis Barbosa

Single-Image Shape from Defocus
José Ricardo Torreão, João Fernandes

Parallel Workshops (In Portuguese)

Terça - 11/10/05

Workshop de Tomografia

9:00 – 10:30 (Jacarandá 3)

A Importância de PET em Medicina: Desenvolvimento e Problemas no Brasil
Cláudio Meneghetti (INCOR-USP)

Financiamento e Projetos Envolvendo Algoritmos para a Reconstrução Tomográfica no Brasil

Sergio Furuie (INCOR-USP)

10:30 – 11:00 Coffee Break (Hall)

11:00 – 12:30 (Jacarandá 3)

Algoritmos para PET: Problemas Numéricos e Computacionais Abordados no Projeto Temático da FAPESP

Álvaro Rodolfo De Pierro (UNICAMP)

Um Relacionamento entre as Áreas de Tomografia e Reconhecimento de Padrões

Nelson Mascarenhas (UFSCAR)

Quarta - 12/10/05

Workshop de TV Digital e Interativa

8:00 – 9:45 Sessão 1 (Salão Álamo)

Chair: Tatiana Tavares (UNIFACS)

Canal de Interatividade: Conceitos, Potencialidades e Compromissos
Marcus Aurélio Ribeiro Manhães, Pei Shieh

Solução RF-Intrabanda para o Canal de Interatividade do Sistema Brasileiro de Televisão Digital

Danilo Santos, Erik Silva, Fabrício Carvalho, Marcelo Alencar

Uma Proposta de Canal de Interatividade para o SBTVD através de Comunicação sem fio em RF Intrabanda

Lucas Barbosa, Jaqueline Gonçalves, Edmilson Moraes, Rafael Moreira, Rubens Sonntag, Luís Meloni

Desenvolvimento de Aplicativos para EAD através da TV Digital

Davi Santos, Rodrigo Araújo, Rodolfo Barros, Luís Meloni

A usabilidade no Desenvolvimento de Aplicações para TV Interativa

André Valdestilhas, Felipe Almeida

Utilizando o Framework AppTV no Desenvolvimento de Aplicações para TV Digital Interativa

Tatiana Tavares, Celso Alberto Saibel Santos, Lille Hattori

MHP e JavaTV como Plataformas de Desenvolvimento de Conteúdo para a Televisão Digital Interativa

José Luis Gonzalez Clua

8:00 – 9:45 Sessão 2 (Salão Flamboyant)

Chair: Esteban W. Gonzalez Clua (PUC-Rio)

Estudo e Implementação de Funções de Estimção-Compensação de Movimento de Complexidade Computacional Reduzida para Emprego em Compactação de Vídeo Digital

Victor Benso, Ticiano Bragatto, Juliano Sugawara, Marcus Vinicius Lamar

Segmentação de Vídeo Baseada na História da Codificação

Cristina Vasconcelos, Bruno Feijó, Dilza Szwarcman

Uma Experiência no Gerenciamento de Metadados na TV Digital Interativa

Fabio da Silva, Paulyne Jucá

H.264 Implementation Test Using the Reference Software

Thiago Figueiró, Viviane Cordeiro, Leticia Guimarães, Altamiro Susin

Sistema de Personalização para Interfaces de TV Móvel

Fabiano Gallindo, Gabriella Souza

Restaurants

Abade (Portuguese, Seafood)
Via Costeira - Ponta Negra
Cards: All
Tel.: (84) 3219-4469

Brocoió (Regional)
Praia de Camboinha Street S/N - Ponta Negra
Cards:
Tel.: (84) 3219-0290

Camarões (Seafood)
Av. Eng. Roberto Freire, 2610 - Ponta Negra
Rua Pedro Fonseca Filho, 8887 - Ponta Negra
Cards: All
Tel.: (84) 3219-2424

Chitão Português (Portuguese)
Rua Aristides Porpino Filho, 285 - Ponta Negra
Cards: None
Tel.: (84) 3219-3968

Funchal (Seafood)
Av. Eng. Roberto Freire, 3110 - Ponta Negra
Cards: All
Tel.: (84) 3219-4883

Galo do Alto (Regional, Seafood)
Rua Dr. Manoel A. B. de Araújo, 142 - Alto de Ponta Negra
Cards: Visa and Redecard.
Tel.: (84) 236-2330

Guinza (Japanese, Seafood)
Via Costeira - Ponta Negra
Cards: All
Tel.: (84) 3219-2002/3219-2525

Le Soleil / Sushi Bar (French/Japanese)
Ocean Palace Hotel - Via Costeira
Cards: All
Tel.: (84) 3219-4144

Manary (Seafood)
Rua Francisco Gurgel, 9067 - Praia de Ponta Negra - Manary Praia Hotel
Cards: All
Tel.: (84) 3219-2900

Mangai (Regional)
Av. Amintas Barros, 2593 – Lagoa Nova
Cards: Visa, CredCard
Tel: (84) 3206-3344

Marenosso (Regional)
Rua Aderbal Figueiredo, 980 - Petrópolis (Centro de Turismo)
Cards: Visa
Tel.: (84) 3211-6218

Paçoca de Pilão (Regional)
Deputado Márcio Marinho Avenue, 5708 - Pirangi do Norte - Parnamirim / RN
Cards:
Tel.: (84) 238-2088

Piazzale Italia (Italian, Seafood)
Rota do Sol - Ponta Negra
Cards: All
Tel.: (84) 3219-5023/3236-2697

Tábua de Carne (Regional)
Av. Eng. Roberto Freire, 3241 - Capim Macio
Cards: All
Tel.: (84) 3642-1236

Tibério (Italian)
Av. Eng Roberto Freire, 9102 - Ponta Negra
Cards: Visa and CredCard
Tel.: (84) 3219-0033

Tourism

Centro de Turismo (Crafts)
Aderbal de Figueiredo Street, 980 Petrópolis
Tel.: (84) 3211-6218
Obs.: Every Thursday night there is the **Forró com Turista** show

Chile Street (Bars, Nightclubs)
Ribeira burgh

Farol de Mãe Luiza
Próximo da praia de Areia Preta, localizado no alto das dunas do bairro de Mãe Luiza

The World's Biggest Cashew Tree
Pirangi Beach
Open daily, from 8h till 16h.
Entrance Fee: R\$ 2,00

Maracajaú Diver (Diving)
Maracajaú Beach
Tel.: (84) 3261-6200/(84) 9983-4264

Marina Badauê
Rua Dep. Márcio Marinho, S/N – Pirangi Beach
Tel.: (84) 3238-2066

Manoa (Water Park)
Maracajaú Beach
Tel.: (84) 3234.9321/ (84) 3234.9394

Parque das Dunas (Ecological Reserve)
Alexandrino de Alencar Avenue, Tirol
Visitation: From Tuesday to Sunday and holidays, 8h to 18h.
Cooper: From Monday to Sunday and holidays, 4h30min to 9h and 15h to 18h.
Tel.: (84) 3201-4440 / 3201-3985

Reis Magos Fortress
Located in the Praia do Forte, in the Santos Reis burgh
Open daily, from 8h till 16h.
Entrance Fee: R\$ 2,00
Tel.: 84) 3202-2006

Official Tourism Agency :

Harabello Turismo
Tel.: (84)3611.9191 - Fax: (84) 3611.9191
E-mail: harabelotur@samnet.com.br

Tourism trips (values per person):

Trip to Maracajaú with snorkeling	R\$ 75,00
Pipa Beach	R\$ 40,00
Baia Formosa Beach	R\$ 40,00
Barra de Cunhau Beach	R\$ 40,00
South coast until Camurupim	R\$ 40,00
Noturn Show Zás Trás Boite	R\$ 40,00
Sand Buggy to North coast	R\$ 60,00
Sand Buggy to South coast	R\$ 60,00
City Tour	R\$ 15,00
Ensurance Fee for Trip	R\$ 10,00