

CURRÍCULUM VITAE

1. PERSONAL DATA

NAME

Luiz Velho

INSTITUCIONAL ADDRESS

IMPA - Instituto de Matemática Pura e Aplicada
Estrada Dona Castorina, 110
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ELECTRONIC ADDRESSES

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UPDATED ON

05 of June of 2026

2. EDUCATION

2.1. DEGREES

Doctor of Philosophy in Computer Graphics and Vision
Department of Computer Science, University of Toronto,
Toronto, Canada, 1994
Thesis: “*Piecewise Description of Implicit Surfaces and Solids*”
Supervisor: Demetri Terzopoulos

Master of Science in Computer Animation
The Media Laboratory, Massachusetts Institute of Technology
Cambridge, Massachusetts, 1985
Dissertation: “*SCRIPTS: On the Description of Computer Animated Images*”
Supervisor: David Zeltzer

Bacharel em Comunicação Visual e Desenho Industrial
ESDI, Universidade Estadual do Rio de Janeiro
Rio de Janeiro, Brasil, 1979
Project: “*A Imagem no Computador*”

Especialização em Informática
Pontifícia Universidade Católica
Rio de Janeiro, Brasil, 1978
Project: “*Desenho de Formulários por Computador*”

2.2. SCHOLARSHIPS AND GRANTS

Pesquisador Senior, CNPq
Mar 2021 to Feb 2031

Produtividade em Pesquisa, CNPq
Nível 1A, Mar 2015 to Feb 2020
Nível 1B, Mar 2005 to Feb 2015
Nível 1C, Aug 2001 to Feb 2005
Nível 2A, Aug 1999 to Jul 2001
Nível 2B, Aug 1997 to Jul 1999

Cientista do Nosso Estado, Faperj
10/2007 a 09/2009 - 10/2009 a 09/2012 - 10/2012 a 09/2015 - 10/2015 a 09/2018 - 10/2018 a 09/2020 - 10/2020 a 09/2022 - 10/2022 a 12/2025 - 01/2026 a 12/2028

Pesquisador Associado, CNPq
Nível 2C, Aug 1994 to Jul 1997

Doutorado, CNPq
Jan 1991 to Jul 1994

University of Toronto Open Fellowship
Jan to May 1991

Mestrado, CAPES / MEC
Sept 1984 to Jul 1986

Extensão, CAPES / EMBRAFILME
Nov 1981 to Feb 1982

Projetos Especiais, FUNARTE / MEC
Mar 1979 to Dec 1979

Trabalho-Arte, UERJ / MEC / DAC
Mar to Dec of 1978 e 1977

2.3. FOREIGN LANGUAGES

2.3.1. ENGLISH

TOEFEL (Test of English as a Foreign Language), Oct 1982

ALIGU (English Usage Test - American Language Institute, Georgetown University), Apr 1981

Cultura Inglesa, Mar 1968 to Dec 1974

2.3.2. FRENCH

Aliança Francesa, Mar 1970 to Dec 1972

3. PROFESSIONAL EXPERIENCE

3.1. POSITIONS

Instituto de Matemática Pura e Aplicada

Pesquisador Titular e Professor, since August de 2003

Pesquisador Associado, de September de 1997 a July de 2003

Coordenador do Laboratório VISGRAF, since January de 2000

Membro da Comissão de Atividades Científicas, since July de 2008

Membro eleito do Conselho Técnico Científico, de May de 2009 a July de 2015

Membro do Conselho Técnico Científico, de Março de 2002 a July de 2005

Membro da Comissão de Informática, de September de 2001 a August de 2010

Centre National de la Recherche Scientifique, UMI-CNRS-IMPA

Chercheur, since July de 2005.

Universidade Federal do Rio Grande do Norte

Professor Pleno, since November de 2009.

Instituto Superior Técnico, Universidade Técnica de Lisboa

Professor Catedrático, de September de 2009 a November de 2012.

Microsoft Research

Visiting Scientist, de November de 2002 a February de 2003.

Tecgraf, PUC-Rio,

Consultor Científico, de January 2001 a November de 2002.

Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina

Membro da Comissão de Informática, de June de 2000 a June de 2002.

Instituto de Matemática Pura e Aplicada

Pesquisador do projeto VISGRAF

September de 1994 a August de 1997

Hewlett Packard Laboratories, Palo Alto,

Visiting Scientist

November a December 1994

Courant Institute of Mathematical Sciences, New York University, New York

Visiting Professor

July a August 1994 and January to July 2024

Globo Computer Graphics, Rio de Janeiro

Principal Engineer

October 1986 a September 1990

The Fantastic Animation Machine, New York

Software Engineer.

July 1985 a September 1986

Tele Cine Maruim, Rio de Janeiro,

Software and Animation Designer.

November 1983 a August 1984

TV Globo Network, Rio de Janeiro,

Animation Consultant

Março a August 1984

National Film Board of Canada, Montreal

Visiting Researcher

September 1981 a Março 1982

Morena Filmes - L.C. Barreto - Embrafilme, Rio de Janeiro,

Cameraman and Assistant Cinematographer

January 1980 a April 1982

Serviço Federal de Processamento de Dados, Rio de Janeiro,

Computer Programmer

Março 1978 a December 1980

3.2. COURSES

Point Cloud Segmentation
IMPA, March to June 2026
Luiz Velho

360 end-2-end
IMPA, August to November 2025
Luiz Velho

Tópicos em Modelagem Geométrica
IMPA, March to June 2025
Luiz Velho, Luiz Henrique Figueiredo

Histories of Computer Graphics
IMPATech, March to June 2025
Luiz Velho

Reproduzindo Resultados em CG
IMPA, February 2025
Luiz Velho, Luiz Henrique Figueiredo, Tiago Novello

Neural 3D Vision: From Images to Scene Models
IMPA, August to November 2024
Luiz Velho, Tiago Novello

AI Graphics - Machine Learning for Media Applications
NYU, January to May 2024

Topics on Motion Capture and Applications
IMPA, March to June 2023

Workshop "Da Palavra a Imagem"
Casa FIRJAN, November 2022

Networks for Implicit Representations of 3D Scenes
SIBGRAPI, October 2021

Futuro das Mídias Digitais
Cursos de Cinema da ABC, September 2020, March 2021

Chunty Workshop
IMPA, February 2019

Developing Mobile Multimedia Apps, Botanic: A Case Study
SIBGRAPI, September 2014

Kinect and RGBD Images: Challenges and Applications
SIBGRAPI, September 2012
Luiz Velho, Leandro Cruz and Djalma Lucio

Tópicos em Modelagem: Variedades Computacionais e Aplicações
IMPA, Rio de Janeiro, August a December, 2011.
Luiz Velho, Luis Gustavo Nonato, Marcelo Siqueira e Jean Gallier

Sketch-Based Interfaces and Modeling
SIBGRAPI, September 2010
Luiz Velho, Leandro Cruz

Métodos Matemáticos e Computacionais em Musica
XXXII CNMAC, October 2009
Luiz Velho, Paulo Cezar Carvalho, Marcelo Cicconet, Sergio Krakowski

Compressive Sensing
27 Colóquio Brasileiro de Matemática, Rio de Janeiro, July 2007
Luiz Velho, Adriana Schulz, Eduardo Silva

Workshop on Panoramic Images and Narratives
IMPA, Rio de Janeiro, Marco a July 2009

Parametric Pseudo-Manifolds and Applications
IMPA, February 2009
Luiz Velho, Marcelo Siqueira

Multidisciplinary Workshop on Interactive Media and Natural Interfaces
IMPA, Rio de Janeiro, October a December 2008

Fitting Surfaces to Polygonal Meshes using Parametric Pseudo-Manifolds

SIBGRAPI Conference, Campo Grande, October 2008

Luiz Velho, Marcelo Siqueira, Jean Gallier, Dimas Martinez, Luiz Gustavo Nonato, Dianna Xu

Métodos de Reconstrução 3D

IMPA, Rio de Janeiro, August a December 2007

Luiz Velho, Thomas Lewiner

Topics Seminar on NPR

IMPA, Rio de Janeiro, August a December 2007

Luiz Velho, Luiz Henrique Figueiredo

Análise e Síntese de Coleções de Imagens

IMPA, Rio de Janeiro, Janeiro e February 2006

Luiz Velho, Paulo Cezar Carvalho

Fotografia 3D

25 Colóquio Brasileiro de Matemática, Rio de Janeiro, July 2005

Luiz Velho, Paulo Cezar Carvalho, Asla Sá, Esdras Soares, Anselmo Montenegro, Adailson Peixoto, Luiz Rivera

Introdução ao Processamento de Imagens

IMCA, Peru, December de 2004

Luiz Velho, Marcelo Bernardes Vieira

Tópicos em Modelagem: Superfícies de Subdivisão e Multiresolução

IMPA, Rio de Janeiro, August a December, 2004.

Métodos de Otimização em Computação Gráfica

VI Seminário Internacional en Optimizacion, IMCA, Peru, October 2003

Luiz Velho, Paulo Cezar Carvalho.

Otimização e Aplicações em Computação Gráfica

CATI 2003, Maceio, October 2003.

Mathematical Optimization in Graphics and Vision

SIGGRAPH Conference, San Diego, July 2003

Luiz Velho, Paulo Cezar Carvalho

3D photography: a structured light approach

SIBGRAPI Conference, Fortaleza, October de 2002

Luiz Velho, Paulo Carvalho, Asla M. e Sá, Esdras Soares Filho

Design and Implementation of Three-Dimensional Graphics Systems

IMPA, Rio de Janeiro, Marco a June, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023.

Processamento de Imagens para Computação Gráfica e Visão Computacional

IMPA, Rio de Janeiro, August a December, 2000, 2001, 2002, 2003, 2005, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023.

Tutorial on Mathematical Optimization in Graphics and Vision

SIGGRAPH Conference, San Antonio, July 2002

Luiz Velho, Paulo Cezar Carvalho

Optimization Methods in Graphics

XXII CNMAC - Congresso Nacional de Matemática Aplicada e Computacional, Caxambu, September 2000

Luiz Velho, Paulo Cezar Carvalho e Luiz Henrique Figueiredo

Image Processing and Wavelets

First Latin American Congress of Mathematicians, IMPA, Rio de Janeiro, July 2000

Luiz Velho, Paulo Cezar Carvalho

Numerical Analysis

IMPA, Rio de Janeiro, August a December, 1999

Métodos de Otimização e suas Aplicações em Computação Gráfica

22 Colóquio Brasileiro de Matemática, Rio de Janeiro, July 1999

Luiz Velho, Jonas Gomes, Paulo Cezar Carvalho e Luiz Henrique Figueiredo

Introdução à Teoria de Wavelets

Petrobras, Rio de Janeiro, May 1998 e June 1999

Luiz Velho, Jonas Gomes

From Fourier Analysis to Wavelets

SIGGRAPH Conference, Orlando, July 1998 e Los Angeles, August 1999

Luiz Velho, Jonas Gomes

Implicit Surfaces: Modeling and Visualization
IMPA, Escola de Computação Gráfica, Rio de Janeiro, February 1998

Multiresolution Structures for Graphical Objects
IMPA, Escola de Computação Gráfica, Rio de Janeiro, Janeiro 1998
Luiz Velho, Jonas Gomes

Wavelets and Applications
SIBGRAPI Conference, October 1997
21 Colóquio Brasileiro de Matemática, Rio de Janeiro, July 1997
Luiz Velho, Jonas Gomes

Applications of Wavelets in Computer Graphics
IMPA, Escola de Computação Gráfica, Rio de Janeiro, Janeiro e February 1996
Luiz Velho, Jonas Gomes e Siome Goldstein

Warping and Morphing in Computer Graphics
SIGGRAPH Conference, Los Angeles, August 1995 e August 1997
Luiz Velho, Jonas Gomes, Lucia Darsa, Bruno Costa e Thad Beier

Transformações de Objetos Gráficos
SIBGRAPI Conference, São Carlos, November 1995
Luiz Velho, Jonas Gomes

Deformação e Metamorfose de Objetos Gráficos
20 Colóquio Brasileiro de Matemática, Rio de Janeiro, July 1995
Luiz Velho, Jonas Gomes e Siome Goldstein

Implicit Objects
SIBGRAPI Conference, Curitiba, November 1994

Computer Graphics
New York University, July e August, 1994

Implicit Objects in Computer Graphics
IMPA, Escola de Computação Gráfica, Janeiro e February 1993

Modeling for Computer Graphics
SIGGRAPH Conference, Anaheim, August 1993
Luiz Velho, Jonas Gomes, Vadim Shapiro e Chris Hoffman

Geometric Modeling
SIBGRAPI Conference, Aguas de Lindóia, October 1993
Recife, November 1993

Digital Image,
Universidade Estadual Paulista, S. J. Rio Preto, September 1990

Basic Concepts of Image Synthesis
Universidade de São Paulo, São Paulo, VII Escola de Computação, July, 1990
Luiz Velho, Jonas Gomes

The Twixt Animation System,
Globo Computer Graphics, Rio de Janeiro, October e November 1988

Introduction to Computer Graphics
IMPA, Janeiro e February 1988
Luiz Velho, Jonas Gomes

HP 2100 / 21MX Systems Architecture
TECNOCOOP, Rio de Janeiro, Janeiro a March 1981

Assembler HP, LCS Language, DOS HP, STV 1600 Operating System
SERPRO, Rio de Janeiro, August a November 1980

4. SCIENTIFIC PRODUCTION

4.1. BOOKS

1. *Expanded Reality: New Media and AI*, FAPERJ, 2025.
Jorge Lopes, Sergio Azevedo, Heron Werner and Luiz Velho (editors)
2. *Introduction to Visual Effects: A Computational Approach*, CRC Press, 2022.
Bruno Madeira and Luiz Velho
3. *GPU Ray Tracing in Non-Euclidean Spaces*, Morgan ClayPool Lecture Series, 2022.
Tiago Novello, Vinicius da Silva and Luiz Velho.
4. *Intrinsic Visualization in the Thurston's Geometries*.
33rd Brazilian Mathematical Colloquium, 2021.
Tiago Novello, Vinicius da Silva and Luiz Velho.
5. *Proceedings of the Live Coding Music Seminar*.
IMPA, 2019.
Luiz Velho and Vitor Rolla.
6. *OBSERVATOR!O 2016 - Experiências em Deep Learning*
IMPA / VISGRAF Lab, 2016
Luiz Velho, Juliana Giannella.
7. *Um Olhar nos Espaço de Dimensão 3*
IMPA / MAST, 2015
Luiz Velho, Pierre Berger, Pierre-Yves Fave and Juliana Giannella.
8. *From Fourier Analysis to Wavelets*
Springer Verlag, IMPA Monographs Series, 2015
Luiz Velho, Jonas Gomes.
9. *Design and Implementation of 3D Graphics Systems*
Taylor and Francis, 2012
Luiz Velho, Jonas Gomes and Mario Costa Souza.
10. *Computer Graphics: Theory and Practice*
Taylor and Francis, 2011
Luiz Velho, Jonas Gomes and Mario Costa Souza.
11. *Métodos Matemáticos e Computacionais em Musica*
XXXII CNMAC - Congresso Nacional de Matemática Aplicada e Computacional, 2009
Luiz Velho, Marcelo Cicconet, Sergio Krakowski, Paulo César Carvalho.
12. *Compressive Sensing*
27 Colóquio Brasileiro de Matemática, IMPA, 2009
Luiz Velho, Adriana Schulz, Eduardo Silva.
13. *Image Processing for Computer Graphics and Vision*
Springer Verlag, 2008
Luiz Velho, Alejandro Frery and Jonas Gomes.
14. *Mathematical Optimization in Graphics and Vision*
Morgan Kaufmann,, 2008
Luiz Velho, Paulo Carvalho, Luiz Henrique Figueiredo, Jonas Gomes
15. *High Dynamic Range Image Reconstruction*
Morgan and Claypool Publishers, 2008
Luiz Velho, Asla Sa, Paulo Cezar Carvalho
16. *Fotografia 3D*
25 Colóquio Brasileiro de Matemática, IMPA, 2005
Luiz Velho, Paulo César Carvalho, Esdras Soares, Anselmo Montenegro, Asla Sá, Adelailson Peixoto e Luiz Rivera.
17. *Fundamentos da Computação Gráfica*
IMPA, Serie Computação e Matemática, 2004
Luiz Velho, Jonas Gomes.
18. *Métodos de Otimização em Computação Gráfica*
Notas de Curso, IMCA 2003
Luiz Velho, Paulo Cezar Carvalho.

19. *Mathematical Optimization Methods in Graphics and Vision*
Course Notes, SIGGRAPH 2003
Luiz Velho, Paulo Cezar Carvalho
20. *Tutorial on Mathematical Optimization in Graphics and Vision*
SIGGRAPH Tutorial Notes, 2002
Luiz Velho, Paulo Cezar Carvalho
21. *Implicit Objects for Computer Graphics*
Springer Verlag, 2002
Luiz Velho, Jonas Gomes e Luiz Henrique de Figueiredo
22. *Sistemas Gráficos 3D*
IMPA - SBM, 2001
Luiz Velho, Jonas Gomes
23. *Otimização e Aplicações em Computação Gráfica*
XXII CNMAC - Congresso Nacional de Matemática Aplicada e Computacional, 2000
Luiz Velho, Jonas Gomes, Paulo César Carvalho e Luiz Henrique Figueiredo
24. *Image Processing and Wavelets*
First Latin American Congress of Mathematicians, UMALCA, 2000
Luiz Velho, Jonas Gomes e Paulo César Carvalho
25. *Introdução aos Espaços de Escala*
Escola de Computação 2000
Luiz Velho, Ralph Teixeira e Jonas Gomes (colaborador)
26. *Métodos de Otimização e suas Aplicações em Computação Gráfica*
22 Colóquio Brasileiro de Matemática, IMPA, 1999
Luiz Velho, Jonas Gomes, Paulo César Carvalho e Luiz Henrique Figueiredo
27. *Computação Gráfica: Volume 1*
IMPA - SBM, 1999
Luiz Velho, Jonas Gomes
28. *From Fourier Analysis to Wavelets*
Siggraph Course Notes, 1998 e 1999
Luiz Velho, Jonas Gomes
29. *Warping and Morphing of Graphical Objects*
Morgan Kaufmann, 1998
Luiz Velho, Jonas Gomes, Bruno Costa, Lúcia Darsa
30. *Wavelets e Aplicações em Computação Gráfica*
21 Colóquio Brasileiro de Matemática, IMPA, 1997
Luiz Velho, Jonas Gomes e Siome Goldstein
31. *Image Processing for Computer Graphics*
Springer Verlag, 1997
Luiz Velho, Jonas Gomes
32. *Warping and Morphing of Graphical Objects*
Siggraph Course Notes, 1995 e 1997
Luiz Velho, Jonas Gomes, Bruno Costa, Lúcia Darsa, George Wolberg e John Berton
33. *Deformação e Metamorfose de Objetos Gráficos*
20 Colóquio Brasileiro de Matemática, IMPA, 1995
Luiz Velho, Jonas Gomes, Bruno Costa e Lúcia Darsa
34. *Computação Gráfica: Imagem*
Coleção Computação e Matemática, SBM / IMPA, 1995
Luiz Velho, Jonas Gomes
35. *Introdução à Computação Gráfica*
Course Notes, IMPA, 1994
Luiz Velho, Jonas Gomes e Paulo Roma Cavalcante
36. *Implicit Objects in Computer Graphics*
Série Monografias em Matemática, IMPA, 1992
Luiz Velho, Jonas Gomes
37. *Conceitos Básicos de Computação Gráfica*
VII Escola de Computação, IME-USP, 1990
Luiz Velho, Jonas Gomes

4.2. BOOK CHAPTERS

1. chapter 5 - *Futuros Com Inteligência Artificial*
in "V-Horus: A Virtual Reality Experience", Editora Mourthe, 2025
Antonio Brancaglion, Luiz Velho, Jorge Lopes, Bernardo Alevato, Andrea Lennhoff, Pedro Von Seehausen, Sergio Azevedo
2. chapter 4.3 - *Futuros Com Inteligência Artificial*
in "Festival Futuros Possíveis", Casa FIRJAN, 2024.
Matteo Moriconi, Luiz Velho, and Bernardo Alevato
3. chapter 7 - *Metaverse in Fetal Medicine*
in "3D Physical and Virtual Models in Fetal Medicine: Applications and Procedures ", Springer, 2023.
Luiz Velho, Heron Werner, and Jorge Lopes
4. chapter 33 - *Real-Time Rendering of Complex Fractals.*
in "Ray Tracing Gems II", NVIDIA, 2021.
Tiago Novello, Vinicius da Silva, Helio Lopes and Luiz Velho.
5. chapter *Video and Virtual Reality.*
in "Illustrating Mathematics", American Mathematical Society, 2020.
Tiago Novello, (collaborators) Vinicius da Silva, and Luiz Velho.
6. *Visual Representations for Music Understanding Improvement,*
In Lecture Notes in Computer Science. Springer Verlag, 2018.
Luiz Velho, Leandro Cruz, Vitor Rolla, Juliano Kestenber
7. *Virtual Emotion to Expression: A Comprehensive Dynamic Emotion Model to Facial Expression Generation Using the MPEG-4 Standard*
in Computer Animation, Jaron S Wright and Lloyd M Hughes (eds.), Nova Science Publishers, November 2009
Luiz Velho, Paula Rodrigues, Asla Sá
8. *Togetherness: How Real is that Presence*
in Virtual Worlds, IBS – Kochi, 2008
Luiz Velho, Antonia Lucinelma Pessoa Albuquerque
9. *Projective Texture Atlas and Applications*
in Curves and Surfaces: Avignon 06, T. Lyche,, L. Schumaker, (editors), Nashboro Press, Brentwood, 2007
Luiz Velho, Jonas Sossai
10. *Point Cloud Denoising*
in Geometric Design and Computing - Seattle 03, Mike Neatmu, (editor), SIAM Press, 2004
Luiz Velho, Boris Mederos Madrazo, Luiz Henrique de Figueiredo
11. *Adaptive Mesh Extraction using Simplification and Refinement*
in Curve and Surface Design: Saint-Malo 02, T. Lyche, M.-L. Mazure, L. Schumaker, (eds), Nashboro Press, 2003
Luiz Velho, Adailson Peixoto
12. *A Generic Programming Approach to Multiresolution Spatial Decompositions,*
in Visualization and Mathematics III. pg. 340-362. Springer Verlag, 2002
Luiz Velho, Vinicius Mello, Paulo Roma Cavalcanti, e Claudio Silva
13. *Generalizing the C4 Four-directional Box Spline to Surfaces of Arbitrary Topology*
in Mathematical Methods in CAGD: Oslo, T. Lyche and L. Schumaker ed., 2001
14. *Virtual Sets: Concepts and Trends*
in *Design and Management of Multimedia Information Systems: Opportunities and Challenges*, Idea Group, 2000
Luiz Velho, Lucinelma Pessoa Albuquerque e Jonas Gomes
15. *Computação Gráfica: Uma Proposta de Plano Pedagógico*
in *II Curso de Qualidade de Cursos de Graduação da Área de Computação e Informática*
SBC, p. 291-304, 2000
16. *Graphical Objects*
in *II Prêmio Compaq de Estímulo à Pesquisa e Desenvolvimento em Informática,*
Academia Brasileira de Ciências e Ministério de Ciência e Tecnologia,, Instituto UNIEMP, São Paulo, SP, p. 68-83, 1997
Luiz Velho, Jonas Gomes, Bruno Costa e Lucia Darsa
17. *Visualização e Computação Gráfica*
in, Diana Domingues (ed.), *Arte no Século XXI*, Editora UNESP, p. 113-117, 1997
18. *Algorithmic Modeling*
in J. Gomes (org), *Modeling in Computer Graphics*
Siggraph Course Notes, p. 98-134, 1993

4.3. ARTICLES IN SCIENTIFIC JOURNALS

1. *GaussianFusion AI: Urban 3D Reconstruction and Label-Efficient Segmentation with Gaussian-Based Splatting*. IEEE Geoscience and Remote Sensing Letters, 2026.
Thiago Baldvieso, Fabio Suim, Luiz Velho, and Paulo Rosa.
2. *[Re] Curve-Fitting with Piecewise Parametric Cubics*. ReScience C, 2026,
Daniel Perazzo, Davi Castro, Luiz Velho, and Luiz Henrique de Figueiredo.
3. *Democratizing Interactivity: An Overview of Interfaces for Multimedia Machine Learning* Computers and Graphics, 2025.
Alberto Kopiler, Guilherme Schardong, Luiz Schirmer, Daniel Perazzo, Tiago Novello, and Luiz Velho
4. *Geometric implicit neural representations* Computers and Graphics, 2024.
Luiz Schirmer, Tiago Novello, Vinicius da Silva, Guilherme Schardong, Helio Lopes, and Luiz Velho.
5. *MR-Net: Multiresolution Sinusoidal Neural Networks* Computers and Graphics, 2023.
Hallison Paz, Daniel Perazzo, Tiago Novello, Guilherme Schardong, Luiz Schirmer, Vinicius da Silva, Daniel Yukimura, Fabio Chagas, Helio Lopes, and Luiz Velho.
6. *DirectVoxGO++: Grid-Based Fast Object Reconstruction using Radiance Fields* Computers and Graphics, 2023.
Daniel Perazzo, Joao Paulo Lima, Luiz Velho, and Veronica Teichrieb.
7. *Exploring Differential Geometry in Neural Implicits* Computers and Graphics, 2022.
Tiago Novello, Guilherme Schardong, Luiz Schirmer, Vinicius da Silva, Helio Lopes, and Luiz Velho.
8. *The use of Metaverse in Fetal Medicine and Gynecology* European Journal of Radiology, 2022.
Heron Werner, Gerson Ribeiro, Vinicius Arcoverde, Jorge Lopes, and Luiz Velho.
9. *How to see the eight Thurston geometries* Ensaios Matemáticos, SBM, 2021.
Tiago Novello, Vinicius da Silva, Mikhail Belolipetsky and Luiz Velho.
10. *Interdisciplinaridade, colaboração e imersão: o design de uma experiência em realidade virtual com o objetivo de preservação da memória* Revista Museologia e Interdisciplinaridade, Revista Museologia e Interdisciplinaridade , 2021.
Andrea Lennhoff , Luiza Novaes and Luiz Velho.
11. *Predicting Dengue Outbreaks in Brazil with Manifold Learning on Climate Data*. Expert Systems With Applications, 2021.
Caio Souza, Pedro Maia, Lucas Stolerma, Vitor Rolla and Luiz Velho.
12. *A Simple and Complete Discrete Exterior Calculus on General Polygonal Meshes*. Computer Aided Geometric Design, 2021.
Lenka Ptackova and Luiz Velho.
13. *Data Visualization in the Time of Coronavirus*. SDRJ - Strategic Design Research Journal, 2, 2021.
Special Issue on Design contributions for the COVID-19 global emergency.
Julia Giannella and Luiz Velho.
14. *Self-similarity of Classical Music Networks*. Fractals, 2020.
Vitor Rolla, Pablo Riera, Pedro Souza, Luiz Velho, and Jorge Zubelli.
15. *Global Illumination of Non-Euclidean Spaces*. Computers and Graphics, SIBGRAPI Special Edition, 2020.
Tiago Novello, Vinicius da Silva, and Luiz Velho.
16. *Visualization of Nil, Sol, and $SL_2(R)$ Geometries*. Computers and Graphics, 2020.
Tiago Novello, Vinicius da Silva, and Luiz Velho.
17. *Experiments in Situated Participatory Virtual Reality*. Brazilian Journal of Development, 2020.
Luiz Velho, Djalma Lucio, and Leo Carvalho.
18. *TensorPose: Real-time pose estimation for interactive applications*. Computers and Graphics, 2019.
Luiz Schirmer, Djalma Lucio, Alberto Raposo, Luiz Velho, and Helio Lopes.

19. *Visualização de Coleção de Imagens*.
 Dialogo com a Economia Criativa, 2019.
 Luiz Velho and Julia Giannella.
20. *VR Tour: Guided Participatory Meta-Narrative for Virtual Reality Exploration*.
 Revista GEMInIS, 2019.
 Luiz Velho, Julia Giannella, Djalma Lucio, and Vinicius Silva.
21. *The complexity of classical music networks*,
 Europhysics Letters, 2018,
 Luiz Velho, Vitor Rolla, Juliano Kestenberg.
22. *Hough Transform for Real-Time Plane Detection in Depth Images*,
 Pattern Recognition Letters, 2018.
 Luiz Velho, Eduardo Vera Sousa, Djalma Lucio, Leandro Fernandes
23. *Local Möbius Transformations Applied to Omnidirectional Images*.
 Computers and Graphics, 2017.
 Luiz Velho, Leonardo Souto, Leonardo Sacht
24. Automatic reconstruction of ancient Portuguese tile panels
 IEEE Computer Graphics and Applications, 2016.
 Luiz Velho, Fernanda Andalo, Gustavo Carneiro, Gabriel Taubin, Siome Goldenstein
25. *Sketch-Based Modeling and Adaptive Meshes*
 Computers and Graphics, 2015.
 Luiz Velho, Emilio Brazil, Ronan Amorim, Mario Costa Souza and Luiz Henrique Figueiredo
26. *Real-time Correction of Panoramic Images using Hyperbolic Moebius Transformations*
 Journal of Real-Time Image Processing, 2015.
 Luiz Velho, Luis Penaranda, and Leonardo Sacht
27. *Facing the High-dimensions: Inverse Projection with Radial Basis Functions*
 Computers and Graphics, 2015.
 Luiz Velho, Elisa Portes, Emilio Vital Brazil, Jesus Mena-Chalco, Luis Gustavo Nonato, Faramarz Samavati, Mario Costa Sousa
28. *ChoreoGraphics: An Authoring Tool for Dance Shows*
 Journal of Graphics Tools, 2014.
 Luiz Velho, Adriana Schulz, Wojciech Matusik
29. *An image-space algorithm for immersive views in 3-manifolds and orbifolds*
 Visual Computer, 2014.
 Luiz Velho, Pierre Berger, Alex Laier
30. *Adaptive multi-chart and multiresolution mesh representation*
 Computers and Graphics, 38:332–340, February 2014.
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4.7. THESIS

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4.8. THESIS SUPERVISION

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2. Pedro Souza
Vector Graphics
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3. Thiago Baldivieso
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4. Thales Magalhães
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5. Daniel Perazzo
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6. Diana Aldana
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8. Caio Souza
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9. Luiz Schirmer
Pose Detection and Tracking
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10. Andrea Lennhoff
Museums and Media
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11. Julia Giannella
Visualization
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12. Bruno Madeira
Métodos de Visão Computacional e Processamento de Imagens para Estereoscopia Horizontal
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13. Lenka Ptackova
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18. Juliano Kestenbergl
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19. Barbara Pires e Castro
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20. David da Silva Pires
Estimação de movimento a partir de imagens RGBD usando homomorfismo entre grafos
Tese de Doutorado, USP, 2012, co-orientador Roberto Cesar Jr.
21. Dália Bonila
Simulação de Fluidos
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22. Adriana Schulz
ChoreoGraphics: An Authoring Environment for Dance Shows
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23. Leandro Cruz
Modelagem de Terrenos
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24. Alexandra Camargo Alves
Sistemas de autoria para produção de animações por crianças utilizando Interfaces naturais
Tese de Doutorado, USP, 2011, co-orientadora Roseli Lopes
25. Alexandre Chapiro
Improving Mobile Videos
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26. Ives Macedo Junior
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28. Anderson Mayrink
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Tese de Doutorado, IMPA, 2009
30. Aldo Rene Zang
Esquema Híbrido para Amostragem de Mapas de Iluminação em Renderizações Foto-Realista
Dissertação de Mestrado, IMPA, 2009, co-orientador Paulo Cezar Carvalho
31. Esdras Medeiros
Topologia Solida
Tese de Doutorado, IMPA, 2008
32. Adriana Schulz
Compressive Sensing
Trabalho de Conclusão, UFRJ, 2008, co-orientador Eduardo Silva
33. João Velho
Motion Graphics
Dissertação de Mestrado, ESDI, 2008
34. Ives Macedo Junior
Animação e Simulação de Fluidos
Dissertação de Mestrado, IMPA, 2007
35. Paula Salgado Lucena
Animação Facial
Tese de Doutorado, PUC-Rio, 2007, co-orientador Bruno Feijó.
36. Dimas Martinez Morera
Geodésicas em Superfícies Discretas
Tese de Doutorado, IMPA, 2006, co-orientador Paulo Cezar Carvalho
37. Luiz Antonio Rivera
Animação Baseada em Física com Modelos Geométricos em Multi-Resolução
Tese de Doutorado, PUC-Rio, 2000, co-orientador Paulo Cezar Carvalho
38. Vinícius Melo
Estruturas de Dados Volumétricas
Tese de Doutorado, IMPA 2006
39. Bruno Madeira
Match Move
Dissertação de Mestrado, IMPA 2006, co-orientador Paulo Cezar Carvalho
40. Jonas Sossai Jr.
Atlas Variacionais usando Mapeamentos Projetivos
Dissertação de Mestrado, IMPA 2006
41. Marcus Aurelius Cordenunsi Farias
Operações Booleanas Luiz Velho, Objetos Definidos por Pontos
Dissertação de Mestrado, UFRGS, 2006, co-orientador João Comba
42. Sueni de Souza Arouca
Método implícito para reconstrução de curvas a partir de pontos esparsos
Dissertação de Mestrado, PUC-Rio, 2006, co-orientador Helio Lopes
43. Fabiano Segadaes Romeiro
Hardware-assisted rendering of CSG models
Dissertação de Mestrado, IMPA, 2006, co-orientador Luiz Henrique de Figueiredo
44. Hedlena Bezerra
Colorização 3D para Animação 2D
Dissertação de Mestrado, PUC-Rio, 2005, co-orientador Bruno Feijó

45. Aruquia Peixoto
Simplificação de Superfícies Implícitas Não-Compactas com Preservação de Topologia
Dissertação de Mestrado, COPPE - UFRJ, 2005, co-orientador Ricardo Farias
46. Moacyr Barbosa da Silva
Eixos Mediais
Tese de Doutorado, IMPA, 2005, co-orientador Ralph Teixeira
47. Lourena Rocha
Interpolação de Movimento Baseada em Momentos
Dissertação de Mestrado, IMPA, 2004, co-orientador Paulo Cezar Carvalho
48. José Luiz Soares Luz
Visualização de Superfícies usando Pontos
Dissertação de Mestrado, IMPA, 2004, co-orientador Paulo Cezar Carvalho
49. Antônio Apolinário
Representação Hierárquica de Funções de Distância
Tese de Doutorado, COPPE - UFRJ 2004, co-orientador Cláudio Esperança
50. Boris Medeiros Madrazo
Visualização de Superfícies Implícitas
Tese de Doutorado, IMPA 2004, co-orientador Luiz Henrique de Figueiredo
51. Heloisa Reis Leal
Operações CSG para Representações de Pontos
Dissertação de Mestrado, PUC-Rio, 2004, co-orientador Waldemar Celes
52. Sergio Estevão Machado Lisboa Pinheiro
Um sistema de cache preditivo para o processamento em tempo-real de grandes volumes de dados gráficos
Tese de Doutorado, PUC-Rio, 2004, co-orientador Waldemar Celes
53. Aldo Nogueira e Elaine Prata
Modelagem e Visualização Baseada em Imagens
Iniciação Científica, UERJ, 2003
54. Marcelo Medeiros Carneiro
Interfaces Assistidas para Cegos usando Dispositivos Reativos e Transformadas de Distância
Tese de Doutorado, PUC-Rio, 2002, co-orientador Marcelo Gattass
55. Esdras Soares de Medeiros
Fotografia 3D
Dissertação de Mestrado, IMPA, 2002
56. Adailson Peixoto
Extração de Malhas em Multiresolução
Tese de Doutorado, PUC-Rio, 2002, co-orientador Marcelo Gattass
57. Regis Destobbeleire
Super-Resolution
Stage d'Option Scientifique, Ecole Polytechnique, 2002
58. Paula Salgado Lucena
Animação Facial
Dissertação de Mestrado, PUC-Rio, 2002, co-orientador Marcelo Gattass
59. Paul Billault
Texture Synthesis Algorithms
Stage d'Option Scientifique, Ecole Polytechnique, 2001
60. Bruno Madeira
Target Tracking
Trabalho de Conclusão, IME, 2001
61. Anselmo de Paiva
Compressão de Dados Volumétricos Baseada na Transformada do Cosseno Local
Tese de Doutorado, Departamento de Informática, PUC-Rio, 2001, co-orientador Marcelo Gattass
62. Anderson Mayrink
Espaços de Escala e Detecção de Arestas
Dissertação de Mestrado, Visgraf / IMPA, 2000
63. Rodrigo Toledo
Visualização de Terrenos em Multiresolução
Dissertação de Mestrado, Departamento de Informática, PUC-Rio, 2000, co-orientador Marcelo Gattass

64. Kenneth B. Russell,
IMPS: Implicit Surfaces for Interactive Animated Character
MS Thesis Reader, MIT-Media Lab, May de 1999
65. Andre de Machado Matos
Panoramas Virtuais
Dissertação de Mestrado, Departamento de Informática, PUC-Rio, 1998, co-orientador Marcelo Gattass
66. Fernando Wagner da Silva
Um Sistema de Animação por Movimento Capturado
Dissertação de Mestrado, Departamento de Informática, UFRJ, 1998.

4.9. POST-DOC SUPERVISION

Rafael Romeiro - 2024-2026
 Tiago Novello - 2022-2024
 Fabio Suim 2021-2023
 Guilherme Schardong, 2020 - 2023
 Luiz Schirmer 2021 - 2023
 Santiago Guisasola, 2019 - 2021
 Lenka Ptackova, 2017-2018
 Aldo Zang, 2016
 Vitor Rolla, 2015-2022
 Leandro Cruz, 2015-2016
 Fernanda Andaló, 2013-2014.
 Luiz Penaranda, 2012-2014
 Erwan Reanlt, 2010-2012
 André Maximo, 2010-2012
 Noslen Hernandez, 2012
 Marcelo Cicconet, 2011
 Anderson Mayrink, 2009-2010

4.10. SCIENTIFIC DIVULGATION

1. *METAVERSO: Uma nova e poderosa ferramenta de pesquisa científica*,
Ciência Hoje, Junho 2023.
Matteo Moriconi, Luiz Velho, Jorge Lopes, Heron Werner, and Sergio Azevedo.
2. *A Matemática da Animação por Computador*,
in *Ciência Hoje*, SBPC, 2013
Luiz Velho, Luiz Henrique Figueiredo e Diego Nehab
3. “Matemática e o Desenvolvimento de Software”
2004, Luiz Velho, Jonas Gomes e César Camacho
4. “Visorama: Arte e Matemática”
Ciclo Arte, Ciência e Tecnologia
ITAU Cultural, 2003
5. “Sobre o IMPA ”
in *IMPA 50 anos*, 2003
6. “Computação Gráfica e Estilos Visuais” (November, 2000)
Revista Eletrônica Idéias, Escola de Artes Visuais
Luiz Velho, Jonas Gomes
7. “Descrição do Movimento na Era da Informatização ”
in *Nota-Anna*, Analivia Cordeiro, Editora Fapesp, 1997
8. “Vislumbrando o Futuro das Comunicações: a Internet” (November, 1995)
Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes

9. “Novas Tecnologias de Video” (December, 1994)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
10. “Composição de imagens” (May, 1994)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
11. “Vídeo Digital” (March, 1993)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
12. “Padrões de Cor” (December, 1992)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
13. “Fundamentos de Cor” (September 1992)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
14. “Imagem Digital” (June, 1992)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
15. “Computação Gráfica” (March, 1992)
Computação Gráfica, Journal of the Society of Television Engineers
Luiz Velho, Jonas Gomes
16. *Computação Gráfica*,
in *Ciencia Hoje*, Vol. 10, No. 56, pages 36-47, SBPC, August 1989
Luiz Velho, Jonas Gomes

5. PARTICIPATION IN SCIENTIFIC EVENTS

5.1. INVITED TALKS

2025

“Visgraf” - Fast Forward
New Mathematical Methods in Geometry ProcessingI, May 2026.

2025

“Visual Computing @ IMPA - Visgraf Lab”
IMPA Tech R&D Festival, November 2025.

“Humans, Machines and AI”
INT 50 Years, November 2025.

“The Neuron Eye”
Oktobermat (PUC-Rio), October 2025.

“Math, AI & Innovation”
The Role of Design in the Era of AI (ESDI/UERJ), September 2025.

“O Sorriso do Caos”
Encontros Biblioteca Nacional, July 2025.

2024

“Personal Notes and Observations”
60 years of Cicero Mota, September 2024.

2023

“Neferhotep 360”
SEMNA, November 2023.

“Criação de Espetáculos de Dança”
VFXRio Dance, September 2023.

“Dança e Metaverso”
DANCE&TECH, April 2023.

“Da Imaginação a Criação”
ESDI-UERJ, January 2023.

2022

“New-Media Performers”
VOXAR Labs, June 2022.

“Space XR: Realidade Expandida no Metaverso”
Expo-Metaverso - DASA, November 2022.

2021

“Novas Mídias e o Metaverso”
Multivisões Imersivas - Universidade PETROBRAS, December 2021.

“V-Horus 2.0”
SEMNA - Conference of Egyptology, December 2021.

“Next Media for Expanded Reality”
VFXRio, December 2021.

“XR em Experimentações Científicas e Mercado”
X-Reality USP, March 2021.

“As Tendências da Edição para Novas Mídias”
LATC Program for A/V Professionals, February 2021.

2020

“Digital Humans”
VISGRAF Seminar, July 2020.

“Mediated eXperiences”
VFXRio Online, June 2020.

“The Circle of Innovation”
Workshop on Industrial Mathematics, IMPA-CeMEAI, February 2020.

2019

“Pose Detection with Machine Learning”
Rio Info AI Conference , September 2019.

“O Boneco.”
Besides the Screen , September 2019.

"Expanded Virtual Puppeteering."
VISGRAF Seminar, August 2019.

“Live Cinema”
Semana ABC, May 2019.

“Real Time Ray-Tracing”
Rio2C, May 2019.

“Digital Empathy, Robot Style”
ESDI - Microsoft Design Expo Program , May 2019.

"Gaze-Based Interaction in Cinematic 360 VR"
Forum Audiovisual do Mercosul, oct 2019.

"Jos Stam: from Art to Science."
VISGRAF Seminar Talk, March 2019.

"A Matemática dos Filmes de Animação 3D."
Impa Portas Abertas, oct 2019

2018

“The New Museum”
I Panorama em Tecnologias Digitais para Museus, FGV 2018.

“The Tempest”
IMAGINA[trans]forma[inter]ação 2018.

“Future Media”
Rio Creative Conference 2018.

“New Media: Challenges and Perspectives”
Seminar at OITO, 2018.

2017

“Early Years”
Closing Talk at Luiz Velho 60 years celebration, 2017.

“Lance J. Williams - The man and his legacy”
IMPA, 2017

“Yves Meyer ~ Wavelets”
Seminario Premio Abel, IMPA, 2017

“Multi-Player In-Situ VR”
IMPA, 2017

“OBSERVATORIO”
Campus Party, 2017

2016

“Image Analysis and Synthesis: New Contexts”
Seminar on 'Photography and Urban Memory' , IMS., September 2016.

“Visualização de dados”
3 Seminario Big Data Brasil, MP-RJ

2015

“Panoramic Views into the Future”
VFX 2015, December 2015

“research@visgraflab: Trends in Mobile Computing”
ABC/CNRS – Workshop de Bio-Engenharia, October 2015

“Development of Mobile Applications for New Media”
IMPA, Janeiro 2015

2014

“Moebius Transformations and Omnidirectional Images”
VII Semana de Matematica da UFF, October 2014

“3D Shape Reconstruction and Applications”
Workshop on 3D Technologies, September 2014

2013

“Dynamically Adapted Stellar Meshes”
Symposium on Computational Geometry, ACM, June 2013

2012

“HPC for Vison and Graphics”
Workshop em Computação de Alto Desempenho, ABC, December 2012

“Omnidirectional Images and Video”
IME, November 2012

“Computação Visual e suas Aplicações”
IMPA, October 2012

“Fulldome, ... and beyond”
II Workshop de Produção Fulldome, September 2012

2011

“New Media at VISGRAF Lab”
TV Globo, I9, November 2011

“Authoring Tools for Digital Photography”
Seminário Dispositivo Fotografia e Contemporaneidade, September 2011

“Computação Grafica”
IMPA, June 2011

2010

“The ZZ Buffer”
60 Anos de Jorge Stolfi, November 2010

“Image Based Graphics”
WVC, July 2010

“Town Hall Meeting on Interactive Media, Digital Magazines and Design”
IMPA, June 2010

“VISGRAF at 21”
IMPA, February 2010

2009

“The Curricula of my Dreams”
Workshop sobre Ensino da Computação Gráfica, October 2009

2008

“Musica e Dança Interativa”
Ciência e Artes - FIOCRUZ, September 2008

“Novas Mídias”
Ciclo de Debates - ESDI, September 2008

“Coreografismos”
Third Latin American SCAT Workshop, March 2008

“VISGRAF Lab: Past, Present, Future”
IMPA, January 2008

2007

“Topologia Sólida”
ISMM, October 2007

“Relações entre Topologia e Geometria”
SIBGRAPI. October 2007

“Computational Illumination”
PUC-Rio 2007

“Novos Tópicos de Pesquisa em Computação Gráfica”
IV Semana de Eletrônica e Computação, UFRJ 2007

“Fotografia 3D”
Workshop on Graphics, Departamento de Matemática, UFC, February 2007

2006

“Coleções de Imagens e Aplicações”
XXIX CNMAC, September 2006

“O Estado da Arte em Computação Visual”
58 Reunião Anual da SBCP, July 2006

“Novas Mídias”
Grandes Desafios da Computação, SBC, May 2006

“A Matemática da Computação Visual”
Escola de Verão, Departamento de Matemática, UFES, February 2006

2005

“Computação Visual e Matemática”
Palestra Inaugural, I Simpósio de Iniciação Científica, IME-USP, October 2005

“Modeling with Simplicial Diffeomorphisms”
Keynote Speech, Third Eurographics Symposium on Geometry Processing, July 2005

“Research Topics in Graphics”
UFMG, June 2005

“TV Digital e Computação Visual”
IETV, Simpósio sobre TV Digital, June 2005

“The Mathematics of Visual Computing”
PUC-Rio, Colóquio do Departamento de Matemática, April 2005.

“Computer Graphics: The Next Frontier”
UNISINOS, March 2005.

“Reconstructing the Partenon”
IMPA – VISGRAFI CG Seminar February 2005.

2004

“Research Trends in Graphics and Vision”
IMCA, Peru, December 2004

“The Future of Digital Video”
IETV, III Encontro Internacional de Televisão, December 2004

“Mathematical Tools for Visual Computing”
COPEA, November 2004.

“Computer Animation”
PUC-Rio, October 2004.

“A Panoramic View on Visorama”
III Simpósio de Cibercultura, October 2004.

“Real-Time Digitalization of Real Humans”
VII Symposium on Virtual Reality, October 2004.

“Vídeo Digital”
TVE, May 2004.

“Texture Synthesis on Surfaces”,
PUC-Rio, Janeiro 2004

2003

“Interstícios entre Abstrato e Concreto”,
Itaú Cultural, Ciclo Arte, Ciencia e Tecnologia, October 2003

“Intrinsic and Extrinsic Multiresolution”,
Schloss Dagstuhl, July 2003

“Image Processing Satellite Images”,
CRESDA, Beijing, Janeiro 2003

2002

“Procedural and Multiscale Models in Graphics”,
XV SIBGRAPI, October 2002

“Modelos Matemáticos para Imagem Digital e Cor”,
ESDI-UERJ, October 2002

“Multiresolução e Teoria Estelar”,
IME-USP, September 2002

“Binary Multi-Triangulation: Issues and Developments”,
Schloss Dagstuhl, February 2002

2001

“Computação Gráfica em Projetos de Patrimônio Cultural”,
Congresso Brasileiro de Arqueologia, September, 2001

“4-8 Subdivision”,
IBM T.J. Watson Research Center, Janeiro 2001

2000

“Visualização de Panoramas em Multiresolução”,
Escola de Comunicação ECO - UFRJ, October 2000

“Ensino da Computação Gráfica no Brazil”,
Mesa Redonda no XIII SIBGRAPI, October 2000

“Computação Gráfica: Uma proposta de Plano Pedagógico”,
II Curso de Qualidade de Cursos de Graduação da Área de Computação, June 2000

“4-8 Subdivision”,
Mini-symposium on Applications of Subdivision, Curves and Surfaces Conference, June 2000

“4-8 Meshes and Subdivision Surfaces”,
Workshop On Subdivision In Geometric Modeling And Computer Graphics,
Schloss Dagstuhl, March 2000

1999

“Hierarchical 4-K Mesh Structures”,
Princeton University, November 1999

“Quasi Stationary 4-8 Refinement and Subdivision Surfaces”,
New York University, November 1999

“Data Capture Technologies for Film and Video”,
III Seminário de Cinema e Televisão do Mercosul,
Painel Novas Tecnologias do Audiovisual, June 1999

“The Visorama System”,
II Mostra Petrobrás de Realidade Virtual, June 1999

1998

“Wavelet Tools for Digital Painting”,
SIBGRAPI 98, Painel Métodos Multi-Escala, October 1998

“Variable Resolution Modeling”,
XXI CMAC, Caxambu, Minisimpósio de Modelagem Geométrica, September 1998

“Visual Representations”,
ESDI-UERJ, Rio de Janeiro, June 1998

“Multiresolution Meshes”,
IME-USP, São Paulo, May 1997

1997

“Hierarchical Sequential Triangulations”,
Intel Research, Palo Alto, November 1997

“Triangle Meshes and Triangle Strips”,
University of California, Berkeley, November 1997

1996

"Image Based Rendering",
ECO / UFRJ

1995

"Fundamental Approaches for 3D Visualization",
Colóquio Arte no Século XXI, São Paulo

"Meio Tom Digital com Curvas Fractais"
20 Colóquio Brasileiro de Matemática, IMPA, Rio de Janeiro

"Metamorfose em Computação Gráfica"
Centro Universitário da Tijuca, Rio de Janeiro

1994

"New Video Technologies"
Semana de TV - ECO/UFRJ, Rio de Janeiro

"Virtual Reality and Special Effects"
Mostra Realidade Virtual - Centro Cultural Cândido Mendes, Rio de Janeiro

1992

"Animation with Implicit Objects"
MIT-Media Laboratory, Boston

1991

"3D Modeling"
IV Brazilian Symposium on Computer Graphics, São Paulo

1990

"Procedural Models in Animation"
EPUSP/IEEE Symposium in Visual Computing, São Paulo,

1989

"Computer Graphics and Standards"
Universidade de Campinas, Campinas,

"Software Development in Computer Graphics"
I National Seminar of Computer Graphics, Porto Alegre

"Computer Animation Systems"
Instituto Tecnológico da Aeronáutica, São José dos Campos

1988

"Trends and Directions in Computer Graphics"
Pontificia Universidade Católica Rio de Janeiro

"Animation by Computer"
II Meeting of Brazilian Film Animators, São Paulo

"Computer Graphics"
Escola Superior de Propaganda e Marketing, Rio de Janeiro

1987

"Graphical User Interfaces"
II National Congress of Office Automation, São Paulo

"Special Effects and Computer Graphics"
Seminar on Elements of Video Technology, EMBRAFILME, Rio de Janeiro

"Computer Imagery, Shape and Motion"
XX National Computer Congress, SUCESU 87, São Paulo

"Computer Art"
Universidade Santa Ursula, Rio de Janeiro

"Computer Graphics and Design"
Escola Superior de Desenho Industrial, UERJ, Rio de Janeiro

5.2. CONFERENCE COMMITTEES

2019

VFX Rio (Member of the Program Committee)

EXPRESSIVE 2019 (Member of the Program Committee)

2018

RGB-D 2018 (Member of the Program Committee)

EXPRESSIVE 2018 (Member of the Program Committee)

Workshop on Novel Interaction Techniques for Collaboration in VR ACM CHI 2018 (Organizer)

International Conference on Geometric Modeling and Processing - GMP'18 (Member of the Program Committee)

13th International Joint Conference on Computer Vision, Imaging and Computer Graphics (Program Committee Member)

2017

EXPRESSIVE 2017 (Member of the Program Committee)

Eurographics STAR Program (IPC Member)

GMP 17 (Member of the Program Committee)

GRAAP 17 (Member of the Program Committee)

2016

3rd Workshop on Computer VISION for ART Analysis (Member of the Program Committee)

Shape Modeling 16 (Member of the Program Committee)

GMP 16 (Member of the Program Committee)

GRAAP 16 (Member of the Program Committee)

2015

XXI Congreso Argentino de Ciencias de la Computación (Member of the Program Committee)

SGP 15 (Member of the Program Committee)

GMP 15 (Member of the Program Committee)

GRAAP 15 (Member of the Program Committee)

2014

XII Workshop de Computacion Grafica, Imagenes y Visualizacion (Member of the Program Committee)

Workshop on Computer Vision for Art Analysis (Member of the Program Committee)

SGP 14 (Member of the Program Committee)

GMP 14 (Member of the Program Committee)

GRAAP 14 (Member of the Program Committee)

2013

GMP 13 (Member of the Program Committee)

SGP 13 (Member of the Program Committee)

SPM 13 (Member of the Program Committee)

GRAAP 13 (Member of the Program Committee)

2012

CASA 12 (Member of the Program Committee)

GMP 10 (Member of the Program Committee)

SGP 12 (Member of the Program Committee)

3DPVT 12 (Member of the Program Committee)

SPM 12 (Member of the Program Committee)

SMI 12 (Member of the Program Committee)

GRAAP 12 (Member of the Program Committee)

2011

SIBGRAPI 11 (Member of the Advisory Board)
CASA 11 (Member of the Program Committee)
GMP 11 (Member of the Program Committee)
SGP 11 (Member of the Program Committee)
3DPVT 11 (Member of the Program Committee)
SMI 11 (Member of the Program Committee)
GRAAP 11 (Member of the Program Committee)

2010

SIBGRAPI 10 (Member of the Advisory Board)
CASA 10 (Member of the Program Committee)
CACIC 10 (Member of the Program Committee)
GMP 10 (Member of the Program Committee)
SGP 10 (Member of the Program Committee)
3DPVT 10 (Member of the Program Committee)
SPM 10 (Member of the Program Committee)
SMI 10 (Member of the Program Committee)
GRAAP 10 (Member of the Program Committee)

2009

SIBGRAPI 09 (Member of the Program Committee)
WEPG 09 (Member of the Program Committee)
CASA 09 (Member of the Program Committee)
SGP 09 (Member of the Program Committee)
GPM 09 (Member of the Program Committee)
Mathematics of Surfaces 09 (Member of the Program Committee)
SMI 09 (Member of the Program Committee)
GRAAP 09 (Member of the Program Committee)

2008

SIBGRAPI 08 (Member of the Program Committee)
SIGGRAPH 08 (Member of the Grand Jury)
CASA 08 (Member of the Program Committee)
PBG 08 (Member of the Program Committee)
SEMISH 08 (Member of the Program Committee)
SGP 08 (Member of the Program Committee)
3DPVT 08 (Member of the Program Committee)
SBIM 08 (Member of the Program Committee)
SPM 08 (Member of the Program Committee)
Eurographics 08 (Member of the Program Committee)
SMI 08 (Member of the Program Committee)
GRAAP 08 (Member of the Program Committee)

2007

Workshop on Computer Vision Applications for Developing Regions 2007 (Organizer)
ICCV 2007 (Local Organizer)

Mathematics of Surfaces 2007 (Member of the Program Committee)

PBG 07 (Member of the Program Committee)

SIGGRAPH 07 (Member of the Program Committee)

SCA 07 (Member of the Program Committee)

SGP 07 (Member of the Program Committee)

PROCAMS 07 (Member of the Program Committee)

SMI 07 (Member of the Program Committee)

CGI 07 (Member of the Program Committee)

ISAMA 07 (Member of the Program Committee)

GRAAP 07 (Member of the Program Committee)

2006

Grandes Desafios da Computação (Invited Speaker)

SBGAMES 06 (Member of the Program Committee)

SIBGRAPI 2006 (Member of the Program Committee)

Eurographics 2006 (Member of the Posters Committee)

SIGGRAPH 2006 (Paper Reviewer, Course Reviewer)

SCA 06 (Member of the Program Committee)

VIIP 06 (Member of the Program Committee)

PBG 06 (Member of the Program Committee)

PROCAMS 06 (Member of the Program Committee)

3DPVT 06 (Member of the Program Committee)

SMI 06 (Member of the Program Committee)

SPM 06 (Member of the Program Committee)

Workshop Image Based Graphics (Organizer)

International Conference on Computer Graphics Theory and Applications (Member of the Program Committee)

WSCG 06 (Member of the Program Committee)

2005

SBGAMES 2005 (Member of the Program Committee)

Workshop de TV Digital 2005 (Invited Speaker)

SIBGRAPI 2005 (Posters Chair)

SIGGRAPH 2005 (Paper Reviewer)

ACM Symposium on Computer Animation 2005 (Program Committee Member)

Coloquio Brasileiro de Matemática (Co-organizer of the Special Session on Computer Graphics and Vision)

Microsoft Research Faculty Summit 2005 (Invited Researcher)

Latin America Microsoft Research Academic Summit 2005 (Invited Researcher)

XVIII Concurso de Teses e Dissertações SBC, 2005 (Jury Member)

Third Eurographics Symposium on Geometry Processing (Program Committee Member)

Procams 2005 (Member of the Program Committee)

Computer Graphics International (Member of the Program Committee)

Point Based Graphics (Member of the Program Committee)

Tenth ACM Symposium on Solid and Physical Modeling (Member of the Program Committee)

International Conference on Shape Modeling (Member of the Program Committee)

WSCG 2005 (Member of the Program Committee)

2004

VMV 2004 (presenting a paper)

WJogos 2004 (Member of the Program Committee)

VII Symposium on Virtual Reality (Invited Speaker)

III Simposio Cibercultura (Invited Speaker)

SIBGRAPI / SIACG 2004 (Member of the Program Committee)

Eurographics 2004 (Member of the Short Papers Program Committee)

SIGGRAPH 2004 (Course and Papers Reviewer)

Second Eurographics Symposium on Geometry Processing (Member of the Program Committee)

ACM Symposium on Solid Modeling and Applications (Member of the Program Committee)

International Conference on Shape Modeling (Member of the Program Committee)

Symposium on Point-Based Graphics (Member of the Program Committee)

Second Symposium on 3D Data Processing, Visualization and Transmission (Member of the Program Committee)

2003

SIBGRAPI 2003 (Member of the Program Committee, 3 papers, video)

SGP 2003 (Member of the Program Committee)

Shape Modeling and Applications 2003 (Member of the Program Committee)

SIGGRAPH 2003 (Member of the Program Committee)

Agents 2003 (Member of the Program Committee)

ACM Solid Modeling 2003 (Member of the Program Committee)

Dagstuhl Seminar (Invited Speaker)

2002

Computer Animation 2002, November 2002 (Member of the Program Committee)

SIBGRAPI 2002 (Keynote Speaker, Presented 3 Papers and Teaching a Course)

SIGGRAPH 2002, August 2002 (Papers Committee Member and Teaching a Course)

IMPA - 50 Anos, July 2002 (Organizer Special Session on Computer Graphics and Vision)

First Ibero-American Symposium in Computer Graphics, 2002 (Co-Chair of the Program Committee and Presented a Paper)

VisMath 2002, May 2002 (Member of the Program Committee and Presented a Paper)

Shape Modelling and Applications 2002, May 2002 (Member of the Program Committee)

2001

Computer Animation 2001, November 2001 (Member of the Program Committee)

Visualization 2001, October 2001 (Paper Reviewer)

SIBGRAPI 2001 (Paper Reviewer, Presented 2 Papers and a Poster)

Congresso Brasileiro de Arqueologia, September 2001 (Participation in a Working Group on Computer Applications)

ACM SIGGRAPH 2001 Computer Graphics Conference, Los Angeles, August 2001 (Paper reviewer)

Colóquio Brasileiro de Matemática, July 2001 (Organizer of Special Session in Computer Graphics)

23 Colóquio Brasileiro de Matemática, July 2001 (Organizer of Special Section on Computer Graphics)

Graphics Interface 2001, June 2001 (Paper reviewer)

Shape Modeling International, May 2001 (Presented a paper)

2000

Visual 2000, September 2000 (Member of the Program Committee)

XIII Brazilian Symposium on Computer Graphics and Image Processing, October 2000 (Panel Member)

XXII CNMAC - Congresso Nacional de Matemática Aplicada e Computacional, September 2000 (Presented a Course)
ACM Siggraph 2000 Computer Graphics Conference, New Orleans, August 2000 (Papers Committee Member)
Escola de Computação, IME/USP, July 2000 (Presented a Course)
First Latin American Congress of Mathematicians, IMPA, July 2000 (Presented a Course)
Mathematical Methods for Curves and Surfaces, (Presented a Paper)
SBC2000 - XX Congresso da Sociedade Brasileira de Computação, (Presented a Course)
IEEE Visualization 2000 (Paper Reviewer)
Computer Animation 2000, May 2000 (Member of the Program Committee)
Workshop on Subdivision in Geometric Modeling and Computer Graphics, March 2000 (Presented a Paper)

1999

Fourth Workshop on Modeling with Implicit Surfaces, Eurographics, October 1999 (Member of the Program Committee)
XII Brazilian Symposium on Computer Graphics and Image Processing, October 1999 (presented 2 Papers and Poster)
Eurographics Multimedia 99 Workshop, September 1999 (Presented a Paper)
ACM Siggraph 99 Computer Graphics Conference, August 1999 (Papers Committee Member, Presented a Course)
22 Colóquio Brasileiro de Matemática, July 1999 (Organizer of Special Session in Computer Graphics, Presented a Course)
IEEE Visualization 99 (Paper Reviewer)
UIST 99 (Paper Reviewer)

1998

SIBGRAPI 98, October 1998 (Invited Speaker in a Panel, presented 3 Papers, a Course and 2 Videos)
ACM Siggraph 98 Computer Graphics Conference, July 1998 (Paper Reviewer, Presented a Technical Sketch and a Course)
Third Workshop on Modeling with Implicit Surfaces, Eurographics, July 1998 (Member of the Program Committee)
IEEE Visualization 98 (Paper Reviewer)
XXI CNMAC, Minisimpósio de Modelagem Geométrica (Invited Speaker)
First Workshop on Image-Based Modeling and Rendering, Stanford, Janeiro 1998 (Presented a Poster)

1997

5th SIAM Conference on Geometric Modeling, New Orleans, November 1997 (Presented a Paper)
ACM Multimedia 97, Seattle, November 1997
SIBGRAPI 97, October 1997 (Member of the Program Committee, presented 2 Papers, a Poster and 4 Videos)
Eurographics 97, Budapest, September 1997
Eurographics Workshop on Computer Animation and Simulation, Budapest, September 1997 (Presented a paper)
ACM Siggraph 97 Computer Graphics Conferences, August 1997 (Paper Reviewer, Presented a Technical Sketch)
CG International 97, June 1997 (Member of the Program Committee, presented a Paper)
21 Colóquio Brasileiro de Matemática (Presented a Course)
IEEE Visualization 97 (Paper Reviewer)
SBC Multimídia 97 (Paper Reviewer)

1996

SIBGRAPI 96, October 1996 (President of the Program Committee, Presented 2 papers and a Poster)
ACM Siggraph 96 Computer Graphics Conference, New Orleans, August 1996 (Paper Reviewer)
Eurographics 96 (Paper Reviewer)
Volume Visualization 96 (Paper Reviewer)
Second Workshop on Modeling with Implicit Surfaces, Eurographics, 1996 (Member of the Program Committee)
7th Eurographics Workshop on Rendering, June 1996 (Member of the Program Committee)
Graphics Interface'96, May 1996 (Paper Reviewer)

1995

4rd SIAM Conference on Geometric Modeling, New Orleans, November 1995 (Presented a Paper)
SIBGRAPI 95, October 1995 (Member of the Video and Program Committee, Presented a Paper and a Tutorial Course)
ACM Siggraph 95 Computer Graphics Conference, (Paper Reviewer, Presented a Tutorial Course and two Papers)
20 Colóquio de Matemática (Presented a Course)
Computer Animation 95, April 1995
First Workshop on Modeling with Implicit Surfaces, Eurographics, April 1995 (Member of the Program Committee)

1994

The Future of Mathematics Communications, Berkeley, December 1994
SIBGRAPI 94, Curitiba 1994 (Video Contributor, Presented a Paper and a Tutorial Course)
ACM Siggraph 94 Computer Graphics Conference, Orlando, August 1994 (Paper Reviewer, Presented a Technical Sketch)
Graphics Interface'94, May 1994 (Paper Reviewer)

1993

3rd SIAM Conference on Geometric Modeling, Tempe, November 1993 (Presented a Paper)
ACM Siggraph 93, Computer Graphics Conference, Anaheim, August 1993, (Paper Reviewer, Presented a Tutorial Course)
SIBGRAPI 93, Recife 1993 (Paper Reviewer, Presented a Paper and Tutorial Course, Organizer of Computer Art Show)

1992

SIBGRAPI 92, Lindoia, November 1992 (Paper Reviewer, Presented a Paper and Tutorial Course, Organizer of Video Show)
Workshop on NetNews, IMPA- Rio de Janeiro, August 1992
Graphics Interface'92 and Workshop on Local Illumination, Vancouver, May 1992 (Presented a Paper)
1992 Symposium on Interactive 3D Graphics, Boston, March 1992

1991

2nd SIAM Conference on Geometric Modeling, Tempe, November 1991 (Presented a Paper)
RIDT'91 - Raster Imaging and Digital Typography, Boston, October 1991
SIBGRAPI 91, São Paulo, July 1991 (Paper Reviewer, Presented a Paper)
ACM Siggraph 91 Computer Graphics Conference - Las Vegas, August 1991 (Presented a Paper)
IMPA Summer Workshop on Geometric Modeling, Rio de Janeiro, Janeiro 1991

1990

EPUSP/IEEE Symposium in Visual Computing, São Paulo, November 1990 (Invited Speaker)
Eurographics '90, Computer Graphics Conference, Montreux, September 1990 (Presented a Paper)
ACM Siggraph 90, Computer Graphics Conference, Dallas, August 1990
VII School of Computing, São Paulo, July.1990 (Presented a Tutorial Course)
III Brazilian Symposium on Computer Graphics and Image Processing, Gramado, May 1990 (Presented a Paper)
IMPA Workshop in Mathematical Aspects of Vision and Image Processing, R.J., Janeiro 1990

1989

IV Abusi Annual Congress (Brazilian Intergraph Association), São Paulo, September 1989 (Invited Speaker)
ACM Siggraph 89, Computer Graphics Conference - Boston, August 1989
II Brazilian Symposium on Computer Graphics and Image Processing, Lindoia, April 1989 (Presented a Paper)

1988

III Abusi Annual Congress (Brazilian Intergraph Association) Rio de Janeiro September 1988 (Invited Speaker)
ACM Siggraph 88, Computer Graphics Conference - Atlanta, August 1988
Ausgraph 88, Computer Graphics Conference, Melbourne, July 1988 (Presented a Paper)
I Brazilian Symposium on Computer Graphics and Image Processing, Petropolis, April 1988.

1987

II Abusi Annual Congress, Rio de Janeiro, September 1987 (Presented a Paper)

ACM Siggraph 87, Computer Graphics Conference - Anaheim, August 1987

1986

ACM Siggraph 86, Computer Graphics Conference - Dallas, August 1986

1985

ACM Siggraph/Sigact, Symposium on Computational Geometry, Baltimore, June 1985

ACM Siggraph 85, Computer Graphics Conference - San Francisco, July 1985

Before 1985

ACM Siggraph 84, Computer Graphics Conference - Minneapolis, July 1984

I Symposium on Computer Graphics, SUCESU, São Paulo, November 1978

Seminar of Design and Teaching, SESU-MEC and FAU-USP, São Paulo, September 1978

V Integrated Seminar of Software and Hardware, NCE-UFRJ, Rio de Janeiro, July 1978

5.3. CONFERENCE ORGANIZATION

International Conference on Geometric Modeling and Processing 2023

Co-Chair

Live Coding Experience 2018

Organizer

Computational Manifolds 2011 - Trimester Program on Computational Manifolds and Applications

Organizer

ICCV 2007

Local Organizer

Workshop on Computer Vision Applications for Developing Countries, 2007

Co-Organizer

CGI 2007

General Chair.

Workshop on Image-Based Graphics 2006

Organizer

SIBGRAPI 2005

Posters Chair

25 Colóquio Brasileiro de Matemática, 2005

Co-organizer of the Special Session on Computer Graphics and Vision

Workshop of Geometry Processing and Applications 2004

Organizer

Workshop on Computer Vision 2004

Organizer

24º Colóquio Brasileiro de Matemática

Organizer of the special session on Computer Graphics

CEGRAPI - Workshop of Thesis and Dissertation 2002

Member of the Examination Committee

IMPA – 50 Anos

Organizer of the special session on Computer Graphics and Vision

First Ibero-American Symposium in Computer Graphics

Co-Chair of the Program Committee

23º Colóquio Brasileiro de Matemática

Organizer of the special session on Computer Graphics

RIOARTE 2001

Membro do Juri de Bolsas para Arte e Tecnologia

22º Colóquio Brasileiro de Matemática

Organizer of the special session on Computer Graphics

V Brazilian Symposium on Computer Graphics and Image Processing, 1992

Chair of the Video Committee

5.4. EXAMINATION COMMITTEES

Ms Defense of Daniel Perazzo (IMPA), March, 2025

PhD thesis defense of Daniel Csillag, (EMAp-FGV), December 2024

PhD thesis defense of Hallison Paz, (IMPA), November 2024

Ms Defense of Diana Aldana, (IMPA), April, 2024

PhD thesis defense of Djalma Lucio, (PUC-Rio), May 2024

PhD thesis defense of Pedro Souza, (IMPA), December 2023

TCC defense of Tomas Ferranti, (EMAp - FGV), February 2023

Ms Defense of Gabriel Abati, (PUC-Rio), May, 2023

Ms Defense of Mariana Duarte, (PUC-Rio), April, 2023

PhD thesis defense of Joao Carlos, (PUC-Rio), May 2022

TCC defense of Daniel Perazzo, (UFPe, May 2022

PhD thesis Defense of Jonatas Grosman, (PUC-Rio) September 2022

PhD thesis Defense of Caio Souza, (IMPA) , October 2022

PhD thesis defense of Luiz Schirmer, (PUC-Rio), Feb 2021

PhD thesis defense of Sonia Gonzales, (PUC-Rio), Feb 2021

PhD thesis defense of Pablo Telles, (PUC-Rio), Sept 2020

MS thesis defense of Thiago Baldivieso, (IME), August 2020

PhD thesis defense of Ezequiel Soto, (IMPA), August 2020

MS thesis defense of Bernardo Alevato, (PUC-Rio), June 2002

MS thesis defense of Carlos Leal, (UFSC), February 2020

MS thesis defense of Fabio Luiz, (IME), January 2020

PhD thesis defense of Ricardo Maroquio, (IME), April 2020

PhD thesis defense of Julia Giannella, (ESDI-UERJ), February 2020

MS thesis defense of Daniel Yukimura, (IMPA), March 2018

MS thesis defense of Aline Becher, (UFSC), February 2018

PhD thesis defense of Andrea Lins, (COPPE-URFJ), September 2017

PhD thesis defense of Guilherme Otranto, (IME-USP), September 2017

PhD thesis defense of Bruno Madeira, (IMPA), August 2017

MSc dissertation defense of Hallison da Paz, (IMPA), April 2017

MSc Dissertation defense of Fernando Mazzini, (IMPA), February 2017

PhD thesis defense of Lenka Ptackova, (IMPA), January 2017

MSc thesis defense on "Detecção e descrição de características visuais", Raphael Evangelista, (UFF) , Apr 2016

PhD thesis defense on "Expanded Panoramas ", Aldo Zang, (IMPA) , Apr 2016

PhD thesis defense on "Fully-parallel pipeline for h-q rendering of vector graphics ", Francisco Ganacim, (IMPA) , Apr 2015

PhD thesis defense on " High-Level Techniques for Landscape Creation", Leandro Cruz, (IMPA) , Mar 2015

PhD thesis defense on "TetraQuad Geometric Representation", Allyson Cabral, (IMPA) , Mar 2015

PhD thesis defense on "Optimized Quasi-Interpolators for Image Reconstruction", Leonardo Koller, (IMPA) , Dez 2014

Ms dissertation defense on "Fotografia e interação no Jardim Botânico", Juliano Kestenberg (ESDI), Aug 2014

PhD thesis defense on "Foliating Marching Cube's Cases In Dimension Three And Four ", Jyrko Correa, (IMPA) , Dez 2013

Ms dissertation defense on "Corpo e Media" , Barbara Castro (UFRJ), Aug 2013

Ms dissertation defense on "Choreographics" , Adriana Schulz (IMPA), Jan 2012

Ms dissertation defense on "Improving Mobile Video" , Alexandre Chapiro (IMPA), Aug 2011

Ms dissertation defense on "Visualização por Imagens Auto-animadas de Campos Vetoriais", Renata Lins (PUC), March 2011

Ms dissertation defense on "Terrain Modeling", Leandro Cruz (IMPA), March 2011

Ms dissertation defense on "GPU Rendering of Implicit Surfaces", Francisco Ganacim (IMPA), Feb 2011

PhD thesis defense on "Sketch Based Modeling", Emilio Brazil, (IMPA) , Feb 2011

PhD thesis defense on "HRBF Implicits", Ives Macedo, (IMPA), Jan 2011

Ms dissertation defense on " Content-Preserving Projections for Panoramas", Leonardo Koller Sacht (IMPA)), April 2010

Ms dissertation defense on "Geração de Animação Facial em Avatares", Rossana Queiroz (PUC-RS), March 2010

Ms dissertation defense on "NormalShop: Modeling Surface Mesostructure", Thiago Pereira (IMPA), March 2010

Ms dissertation defense on "Point-Based Rendering", Felipe Moura (COPPE/UFRJ)), February 2010

Ms dissertation defense on "A Hybrid Method for Computing Apparent Ridges", Eric Jardim (IMPA), February 2010

PhD thesis defense on " Galerias Inteligentes e Otimizalcao de Posicionamento de Camera", Thales Vieira, (PUC) January 2010

PhD thesis defense on "Simulation of flows with floating particles", Marcos Lage (PUC-Rio), December 2009

Ms. Thesis defense, "Redução de Ruído em Imagens", Andre Targino Costa (COPPE/UFRJ), August 2009

Ms. Thesis defense, "Using Line Integral Convolution to Render Effects on Images", Ricardo Castaneda (IMPA), February 2009

Member of Thesis Committee Ms thesis defense on " Esquema Híbrido para Amostragem de Mapas de Iluminação em Renderizações Foto-Realista", Aldo Rene Zang, IMPA, July 2009

PhD thesis defense on " Visualização Interativa de Modelos Baseados em Pontos", Ricardo Marroquim, UFRJ, September 2008

MS thesis defense on "Motion Graphics", João Velho, ESDI, July 2008

Ms thesis defense on "Efeitos de Fratura para Visualização Não-Realista", Anna Regina Corbo, IMPA, April 2008

PhD thesis defense on "A Equação de Poisson e a Decomposição de Helmholtz-Hodge", Fabiano Petronetto, PUC-Rio, 2008

PhD thesis defense on "Um sistema de geração de expressões faciais", Paula Lucena, PUC-Rio, December 2007

Ms. thesis defense on "Simulation of Fluids for Computer Graphics", Ives Jose Macedo Junior, IMPA, November 2007

PhD thesis defense on "Visualization of Massive Data on GPU", Rodrigo Toledo, LORIA, October 2007

Ms. thesis defense on "Processing Connected Components", David da Silva, IME-USP, August 2007

Ms. thesis defense on "Least Squares Meshes", Catuscia Borges, PUC-Rio, March 2007

Ms. thesis defense on "Reconstrução de Regiões a partir de Amostras com Ruído", Emilio Vital Brazil, IMPA, March 2007

PhD thesis defense on "Optic Flow", Perfilinio Ferreira, IMPA, February 2007

Ms. thesis defense on "Automatic Surface Registration", Thales Vieira, UFAL, February 2007

Ms. thesis defense on "Calibration Methods and Applications", Clarissa Codá, UFAL, February 2007

Prêmio Zeferino Vaz, UNICAMP, November 2006

Ms. thesis defense on "Automatic Surface Registration", Bruno Madeira, IMPA, December 2006

PhD thesis defense on "Novos Métodos Simpliciais em Computação Gráfica", Vinicius Mello, IMPA, April 2006

Ms. thesis defense on "High Dynamic Range Imaging", Rodrigo Martins, PUC-Rio, April 2006

PhD thesis defense on "Controlling Illumination to Boost Information on Image Collections", Asla Sa, IMPA, March 2006

Ms. thesis defense on "Estruturas de partição do Espaço", Marcus Aurelius Farias , UFRGS, March 2006

Ms. thesis defense on "Propagação de Pontos usando Transformada Unscented", Leyza Dorini, UNICAMP, February 2006

Ms. thesis defense on "Scalable Topological Data Structures", Marcos Lage Ferreira, PUC-Rio, February 2006

Ms. thesis defense on "Implicit Curve Reconstruction from Points", Sueni Arouca, PUC-Rio, February 2006

Ms. thesis defense on "Hardware-assisted rendering of CSG models", Fabiano Segadaes Romeiro, IMPA, February 2006

Ms. thesis defense on "Calculo Projetivo de Caixas", Leandro Fernandes, UFRGS, Janeiro 2006

Concurso Prof. Titular - IME/USP, May 2005

PhD thesis defense, Thomas Lewiner, PUC-Rio, July 2005

Ms. thesis defense on "Dynamic BSP-trees", Rodrigo Luque, UFRGS, July 2005

Ms. thesis defense on "Efeitos de Mosaico para Imagens" Geisa Martins Faustino, IMPA, June 2005

MS thesis defense on "3D Shading Effects for Cartoon Animation", Hedlana Bezerra, PUC-Rio, June 2005

PhD thesis defense on "Inverse Rendering", Jose Pinheiro, UFMG, June 2005

Ms. thesis defense on "Reconstrução a partir de nuvem de pontos por funções de Morse discretas", Helton, USP , May 2005

Ms. thesis defense on "Triangulações Adaptativas em Multiresolução", Ricardo Marroquim , COPPE-UFRJ, April 2005

Ms. thesis defense on "Texture Synthesis", Leandro Tonietto, UNISINOS, March 2005

Ms. thesis defense on "Simplificação de Superfícies Implícitas Não-Compactas com Preservação de Topologia", Aruquia Peixoto, UFRJ, February 2005

Ms. thesis defense on "Simplificação de Moléculas", Cynthia Oliveira Ferreira , PUC-Rio, February 2005

D.Sc. thesis defense on "Affine Skeletons", Moacyr Alvim Barbosa , IMPA, Janeiro. 2005

Master thesis defense on "Inpainting", Afonso Paiva Neto, IMPA, November. 2004

Master thesis defense on "Visualização de Superfícies usando Pontos", Jose Luiz Soares Luz, IMPA. October 2004

Master thesis defense on "Interpolação de Movimento baseada em Momentos ", Lourena Rocha, IMPA. October 2004

D.Sc. thesis defense on " Surface Reconstruction from Noisy Point Clouds", Boris Mederos Madrazo, IMPA, September 2004

Master thesis defense on " Operações Booleanas na Modelagem por Pontos", Heloisa Reis Leal, PUC-Rio. August 2004

D.Sc. thesis defense on " Modelagem e Visualização a Mão Livre usando Superfícies Implícitas Variacionais", Álvaro Parari, COPPE/UFRJ, June 2004

D.Sc. thesis defense on "Pertinência em Dimensão Arbitraria com Multiresolução", Luciano Silva, IME –USP, May 2004

MS. defense on "Segmentação Interativa", Romaric Audigier, UNICAMP. February 2004

D.Sc. thesis defense on "Sistema de cache preditivo para processamento em tempo-real de dados gráficos", Sergio Pinheiro, PUC-Rio February 2004

Ms defense on " Uma Abordagem Topológica para Simplificação de Malhas", Antonio Vieira, PUC-Rio, October 2003

D.Sc. thesis defense on "Reconstrução de Cenas 3D", Anselmo Montenegro, PUC-Rio, September 2003

Professorship exam of Roberto Marcondes, IME-USP, July 2003

Master thesis defense on "Triangulação de Superfícies", Esdras Soares Filho, IMPA, February 2003

D.Sc. thesis defense on "Interfaces Assistidas para Cegos", Marcelo Medeiros, PUC-Rio, November 2002

D.Sc. thesis defense on "Extração de Malhas Multiresolução", Adailson Peixoto , PUC-Rio, October 2002

Master thesis defense on "Constructing Discrete Morse Functions", Thomas Lewiner, PUC-Rio, July 2002

Public Exam for Adjunct Researcher of LNCC, June 2002

Master thesis defense on "Expressive Talking Heads", Paula Salgado Lucena, PUC-Rio, June 2002

D.Sc. thesis defense on "Propagação de Informações Locais de Dados Esparsos para Reconstrução de Superfícies", Marcelo Bernardes Vieira , UFMG, April 2002

Master thesis defense on " Algoritmo Multi-resolução para Visualização da Simulação Numérica de Reservatórios Naturais de Petróleo", Antonio Carlos Pereira de Azambuja, PUC-Rio, April 2002

Master thesis defense on "Alinhamento por Maximização de Informação Mutua", Juliano Camargo, IMPA, March 2002

D.Sc. thesis defense on "Acompanhamento de Cenas com Calibração Automática de Camera", Flavio Szenberg , PUC-Rio, December 2001

CAPES, Avaliação do Programa de Doutorado em Matemática Computacional da UFPE, October 2001

Master thesis defense on "Alinhamento de Cameras Virtuais" , Pablo Alfredo Baier, IMPA, September 2001.

Professorship exam of Antonio Elias Fabris, IME-USP, August 2001.

Master thesis defense on "Morfologia Matemática, Segmentação e Equações de Evolução" , Marcilene Dianin, PUC-Rio, August 2001

D.Sc. thesis defense on "Volume Compression using the Lapped Cosine Transform", Anselmo Cardoso de Paiva , PUC-Rio, April 2001

Master thesis defense on “Espaços de Escala e Detecção de Arestas”, Anderson Mayrink, IMPA, October de 2000

Master thesis defense on “Segmentação de Sequenciais de Imagens por Morfologia Matemática”, Franklin Cesar Flores, IME-USP, October 2000

D.Sc. thesis defense on “Animação Baseada em Física e Modelos em Multiresolução”, Luiz Antonio Rivera Escriba, PUC-Rio, September 2000

Master thesis defense on “QuadLOD: Uma Estrutura para a Visualização Terrenos”, Rodrigo Toledo, PUCRio, April 2000

Master thesis defense on “Computing Discrete Minimal Surfaces”, João Paulo Bento, UFRJ, March 2000

Master thesis defense on “Multiple Display Architecture for Virtual Environments over Heterogeneous Networks”, Alexandre G. Ferreira, PUC-Rio, December de 1999

D.Sc. thesis defense on “Curvature Operators in Vision and Image Processing”, Cicero Motta, IMPA, November de 1999

Master thesis defense on “IMPS: Implicit Surfaces for Interactive Animated Character”, Kenneth B. Russell, MIT-Media Lab, May de 1999

Master thesis defense on "Caracterizando Refinamentos e Simplificações em Malhas por Operadores Morfológicos", Mário da Silva Guimarães Neto, IMPA, Abril de 1999

Master thesis defense on "Cenários Virtuais: um Estudo de Sincronismo de Câmera", Lucinelma Albuquerque, PUC-Rio, April de 1999

Master thesis defense on "Representação Multiescala de Objetos Implícitos", Vinicius Mello, Universidade Federal da Bahia, April de 1999

D.Sc. thesis defense on "Visualização Volumétrica de Campos Escalares Definidos em Triangulações Regulares", Jose Maria Ribeiro Neves, COPPE-UFRJ, Janeiro de 1999

D.Sc. thesis defense on “Processamento Geométrico de Dados Volumétricos”, Romildo José da Silva, IMPA, August de 1998

Master thesis defense on “Visualização de Panoramas Virtuais”, Andre Matos, PUC-Rio, July de 1998

Master thesis defense on “Geometry of Polyhedra”, Gustavo Bevilacqua, IMPA, August de 1998

Master thesis defense on “Quantização de Imagens”, Marcos Rayol, PUC-Rio, May de 1998

Master thesis defense on “A Motion Captured Animation System”, Fernando Wagner da Silva, UFRJ, March de 1998

Master thesis defense on “Compressão de Imagens”, Marcelo Ferraz, IMPA, September de 1997

PhD thesis defense on “Animação Baseada em Agentes”, Monica Costa, PUC-Rio, April 1997

Master thesis defense on “Metamorfose de Sons”, Siome Goldstein Klein, PUC-Rio, August de 1997

Master thesis defense on “Homeomorfismos e Metamorfose de Modelos Poliedrais em Tetraedrações”, Marcelo Kallman, COPPE, UFRJ, June 1996

Master thesis defense on “Modelagem de um Sistema de Pintura Digital”, Maria Celia Paiva de Freitas, COPPE, UFRJ, Março 1995

Faculty Position in Computer Graphics Escola de Comunicação, ECO-UFRJ, November 1994

6. OTHER ACTIVITIES

6.1. CONSULTING

Aero Labs, 2025
European Research Council Executive Agency, 2011
Dannemann Siemens, 2009
Israel Science Foundation
NSERC, Canada
Olympya, 2004
DRV, 2004
TVE – RJ, 2004
ACM SIGGRAPH, 2001
Tecgraf, PUC-Rio, 2001-2002
Fotorama, 2001
Espaço Telemar, 2000
CONICET
RIOARTE, 2001
CNPq
CAPES
FAPESP
FAPERJ
Programa SOFTEX 2000
IBC – International Biography Center, Cambridge, UK, 1998

6.2. EDITORIAL ACTIVITIES

Computer Graphics Forum, Editorial Board Member, from 2012 to 2013
IEEE Computing Now, Member of the Advisory Board, from 2011 to 2012
IEEE Computer Graphics and Applications, Member of the Editorial Board, from 2010 to 2013
Graphical Models, Member of the Editorial Board, from 2010 to 2012
Computer & Graphics, Member of the Editorial Board, from 2007 to 2012
SIBGRAPI 2005 Posters Proceedings, Editor, 2005
Computer and Graphics – Special Issue SIACG, Guest Editor, 2002
Anais do SIACG, Editor, Eurographics, 2002
CD-ROM do Visorama, Editor, 1999
CD-ROM do SIBGRAPI'97, Editor, SBC, 1997
Journal of SBC - Special Issue in Computer Graphics and Image Processing, Guest Editor, SBC, 1997
Anais do SIBGRAPI'96 e CD-ROM do SIBGRAPI'96, Editor, SBC, 1996
Waldemar Cordeiro: Arte por Computador, Editor, SBC, 1993
Série Computação e Matemática - IMPA / SBM, Member of the Editorial Board
Revista Estudos em Design – AEND, Member of the Editorial Board, from 1993 to 1999
Revista de Informatica Teorica e Aplicada, SBC, Reviewer
Computer Aided Geometric Design, Reviewer
Morgan-Kaufmann Publishers, Reviewer
IEEE Transactions on Visualization and Computer Graphics, Reviewer

Computer Graphics Forum – Eurographics, Reviewer

Transactions on Graphics – ACM, Reviewer

The Visual Computer - Springer Verlag, Reviewer

6.3. SCIENTIFIC SOCIETIES MEMBERSHIP

SBM - Sociedade Brasileira de Matemática

SBC – Sociedade Brasileira de Computação

ACM - SIGGRAPH - Association for Computing Machinery

7. PROJECTS AND PRODUCTION

7.1. EQUIPMENT / SOFTWARE GRANTS AND DONATIONS

1. Jetson Nano (NVIDIA)
2. Titan (NVIDIA)
3. Geforce (NVIDIA)
4. Tablets (NVIDIA)
5. Software (Microsoft)
6. Creative Suite (Adobe)
7. Maya (Autodesk)
8. Phone (Nokia)
9. Liquid Galaxy (Endpoint)
10. Computers (IBM)

7.2. PROJECTS

1. PensaRio, FAPERJ, 2026
2. ProInfra, FINEP, 2026
3. Enxame de Drones, FINEP, 2024
4. Space XR, FAPERJ, 2021-2023
5. Terra das Essências, SMC-RJ, 2021-2022
6. PROCAD-Defesa, CAPES, 2020-2022
7. PCI, MCTI, 2019-2023
8. BRICS, CNPq, 2018-2020
9. Atualização de Equipamentos, FAPERJ, 2016
10. Pos-Doc, CNPq, 2015
11. Exposição Espaços de Dimensão 3, FAPERJ, 2013
12. Projeto Universal, CNPq, 2012
13. Sistemas de Autoria, CNPq, 2011
14. Pesquisador Visitante, CNPq 2011
15. Instituto Nacional de C&T de Matematica, CNPq, 2011
16. Pós-Doutorado, CAPES / Faperj, 2011
17. Realidade Aumentada MoveI, CNPq, 2010
18. Pós-Doutorado Junior, CNPq 2010
19. Projeto Infradata - Domo, FINEP, 2009
20. Instituto Nacional de C&T de Matematica, CNPq, 2009
21. Projeto de Equipamentos de Grande Porte – IMPA, FAPERJ, 2008
22. Projeto Temático – UNICAMP, FAPESP, 2008
23. Projeto Universal – UNICAMP, CNPq, 2008
24. Infraestrutura de Pesquisa, FAPERJ, 2007
25. Pos-doc CNPq, Andei Sharf, 2007
26. 25th CGI , FAPERJ, 2007
27. Cooperação Internacional University of California, Santa Barbara, CNPq / NSF, 2006
28. University of Calgary, 2006
29. Cooperação UFAL, Fapeal, 2006
30. Mitsubishi Research Labs, Projection Software License, 2005
31. Rio Inovação 2, Visorama, Faperj, 2005

32. Cooperação Internacional, INRIA – PUC-Rio. CNPq/França, 2005
33. Projeto VIRTUS. CT-Info, 2005
34. Maya Software Research. Alias, 2005
35. Software Development Donation. Microsoft Research, 2005
36. Programa RHAIE-Inovação, DRV, 2005
37. Renderware Software Development Program. Electronic Arts - Criterion, 2005
38. Instituto do Milênio II – Avanço Global da Matemática Brasileira - *Coordenador Computação Gráfica*, MCT , 2005
39. Cooperação Bilateral / Utah – UFRGS. CNPq/NSF, 2005
40. Fomento Tecnológico. CNPq, 2005
41. Vídeo de Quarta Geração, fase 2. CT-Info - FINEP, 2005
42. Pro-Infra. FINEP, 2005
43. Edital UNIVERSAL. CNPq, 2005
44. MUAN. IBM / Anima Mundi, 2005
45. Projeto Giga. RNP – FINEP, 2004
46. Caixa Mágica. IBM / Anima Mundi, 2003
47. Vídeo Digital de Quarta Geração. CT-Info, FINEP, 2002
48. Terra Lib. CT-Info, CNPq, 2002
49. Video Digital em Matemática. CT-Infra 3, FINEP, 2002
50. Training Program in “*Traitement Numérique de l’Image*”. Ecole Polytechnique, 2002
51. CT-Petro (PUC-Rio / IMPA / Petrobrás). MCT – CNPq, 2001
52. Visita do Prof. Jan Flusser. Academia Brasileira de Ciências, 2001
53. Instituto do Milênio – Avanço Global da Matemática Brasileira, *Coordenador Setorial Computação Gráfica*, MCT, 2001
54. Projeto Integrado. CNPq, 2001
55. Edital Universal. CNPq, 2001
56. ACIS 3D Geometric Modeler. SPATIAL Corp, 2001
57. Training Program in “*Traitement Numérique de l’Image*”. Ecole Polytechnique, 2001
58. Projeto Maya Software. Alias/Wavefront 2000
59. Projeto Cooperação Internacional, MRL-NYU. CNPq / NSF, 1998
60. Projeto Rede Metropolitana ATM. RNP – PROTEM, 1998
61. Projeto Visorama,. FAPERJ, FINEP e FUJB 1997-1998
62. Projeto Integrado,. CNPq, 1998
63. Visita do Prof. Leonidas Guibas,. FAPERJ, 1997
64. Laboratório de Video e Multimídia,. FINEP, 1996
65. PROTEM. MCT, 1995
66. Projeto VISGRAF. FAPERJ, 1994
67. Projeto Simulador de Periscópio. Marinha Brasileira, 1990

7.3. MOBILE APPS

1. *Revelar*, IMPA 2016
2. *Olhar3D*, IMPA 2015
3. *RPic / CPic / QPic*, IMPA 2014
4. *Expo*, IMPA 2014
5. *Botanic*, IMPA 2013
6. *sfcDiter*, IMPA 2012
7. *S3D Mobile*, IMPA 2013

7.4. SYSTEMS

1. MMSW, VFXRio / IMPA, 2025
2. MR-Net, IMPA 2022
3. Dengue, IMPA / Code Ocean, 2021
4. Differentiable Neural Implicits, IMPA 2021
5. Higher Dimensional Neural Implicits, IMPA 2021
6. RayVR, IMPA 2020
7. Expanded Puppeteering, IMPA 2019
8. Interactive 360 Cinematic VR, IMPA 2018
9. VR Tour, IMPA 2018
10. VR Kino+Theater, IMPA 2018
11. Web Orchestra, IMPA 2017
12. *RGB-D \pi*, IMPA 2015
13. *Mesa-3D*, IMPA 2015
14. *Pano Layers*, IMPA 2013
15. *Planovision*, IMPA 2013
16. *MUAN **, IMPA 2012
17. *Panorama Viewer*, IMPA 2011
18. *Virtual Teleporter*, IMPA 2011
19. *Choreographics*, IMPA 2011
20. *Panosuite*, IMPA-Digitok 2010
21. *Normal Editing*, IMPA 2009
22. *Symmetry Completion*, IMPA 2008
23. *Photometric Stereo*, IMPA 2008
24. *X-Motion*, IMPA 2008
25. *Remote Light*, IMPA 2007
26. *Motion Control* . IMPA, 2006
27. *3D Shading Cartoon Animation* . IMPA - PUC, 2005
28. *Multiresolution Mosaics* . IMPA, 2005
29. *Texture Maps* . IMPA, 2005
30. *V4D* . IMPA, 2004
31. *MUAN* . IMPA, 2004
32. *Morpheus*. UERJ, 2003
33. *3DP* . IMPA, 2003
34. *Dynamic Meshes* . IMPA, 2003
35. *Mesh Ops*. IMPA, 2003
36. *Extração de Malhas em Multiresolução*. IMPA, 2002
37. *Multiscale Paint*. IMPA, 2002
38. *Super-Resolution*. IMPA, 2002
39. *3D Meshes*. IMPA, 2002
40. *Virtual Memory for 2D Objects*. IMPA, 2002
41. *Target Tracking*. IMPA - IME, 2001
42. *SG-3D*. IMPA, 2001
43. *Texture Synthesis*. IMPA, 2001

44. *Procedural Features for Subdivision Surfaces*. MRL-NYU, 2001
45. *4-8 Subdivision Surfaces*. Visgraf Lab, IMPA, 2000
46. *Hierarchical 4-K Meshes*. Visgraf Lab, IMPA, 1999
47. *System for Video Segmentation*. Visgraf Lab, IMPA, 1998
48. *Motion Processing System*. Visgraf Lab, IMPA, 1997
49. *Visorama Virtual Reality System*. Visgraf Lab, IMPA, 1996
50. *System for Modeling with Implicit Objects*. Visgraf Lab, IMPA, 1995
51. *Halfioning Software*. Visgraf Lab, IMPA, 1993
52. *Periscope Simulator for the Brazilian Navy*. Globograph / SFB, 1990
53. *System for Image Processing and Special Effects*. Globograph, 1988
54. *Photorealistic 3D Rendering System*. Fantastic Animation Machine, 1986
55. *Parametric Surfaces Modeling System*. Fantastic Animation Machine, 1986
56. *SCRIPTS: 3D Animation System*. Fantastic Animation Machine, 1986
57. *2D Animation System*. Tele Cine Maruim, 1984
58. *Printed Circuit Drawing System*. SERPRO, 1980

7.5.VÍDEOS

1. *TUMBA!*, Space XR, 2024
2. *O Mistério da Tumba*, Space XR, 2024
3. *Neferhotep 360*, Space XR, 2023
4. *Matemática e Música*, Ciclo de Palestras IMPA, 2023
5. *Matemática Aplicada e Novas Mídias*, Ciclo de Palestras IMPA, 2023
6. *Computação Visual e Aplicações*, Ciclo de Palestras IMPA, 2023
7. *A Matemática da Animação 3D*, Ciclo de Palestras IMPA, 2021
8. *V-Horus*, SIGGRAPH Asia VR Theater, 2020
9. *Children Do Not Play War*, SIGGRAPH VR Theater, 2019
10. *VR Kino+Theater*, IEEE VR Conference Videos, 2019
11. *VR Tour*, 2018
12. *The Tempest*, 2018
13. *Indisciplinas*, 2016
14. *Mesa3D – Reconstruindo IMPA*, 2015
15. *Revelar*, 2015
16. *Dance Performance*, 2015
17. *Expo*, 2014
18. *Botanic*, 2013
19. *Choreographics*, SIBGRAPI Video Show 2011
20. *M4G*, SIBGRAPI Video Show 2011
21. *Terrain Visualization*, SIBGRAPI Video Show 2011
22. *CG Chorus Line*, SIBGRAPI Video Show 2010
23. *Motion Scoring*, SIBGRAPI Video Show 2010
24. *Tuio Sketch*, SIBGRAPI Video Show 2010
25. *Dance to the Music / Play to the Motion*, ACM SIGMAD 2010
26. *Virtual and Augmented Reality at IMPA*, IEEE VR Conference 2010
27. *Match Move*, SIBGRAPI Video Show 2009

28. *The Blues Machine*, SIBGRAPI Video Show 2009
29. *Collectable*, SIBGRAPI Video Show 2009
30. *Gramofone*, Festival HTTPVIDEO, Instituto Sergio Motta 2008
31. *Unsquare Dance*, SIBGRAPI Video Show 2008
32. *Expressive Trajectories*, SIBGRAPI Video Show 2008
33. *O Gramophone da Folia*, SIBGRAPI Video Show 2008
34. *O Gramophone Digital*. SIBGRAPI Video Show 2007
35. *Relativistic Visualization*. SIBGRAPI Video Show 2007
36. *Iterative 3D Reconstruction*. SIBGRAPI Video Show 2007
37. *Adaptive Tesselation of Deformable Models*. SIBGRAPI Video Show 2007
38. *Clay Girls*. CGI 2007
39. *Aguas de Março*. VISGRAF 2007
40. *Pandeiro +*. VSIGRAF 2006
41. *Modeling with Bezier Curves*. SIBGRAPI Video Show 2006
42. *Interactive Rendering of CSG Objects*. SIBGRAPI Video Show 2006
43. *Dynamic Adapted Meshes*. SIBGRAPI Video Show 2006
44. *Visualização de Som*. SIBGRAPI Video Show 2006
45. *3D Shading for Cartoon Animation*. SIBGRAPI Video Show 2005
46. *3D Video*. SIBGRAPI Video Show 2004
47. *Space Carving*. SIBGRAPI Video Show 2004
48. *Realistic Real-Time Ocean Rendering*. SIBGRAPI, Video Show 2004 - Microsoft Research, 2003
49. *Progressively Variant Textures*. XVI SIBGRAPI, Video Show - Microsoft Research, 2003
50. *Synthesis on Surfaces*. XIV SIBGRAPI, Video Show - NYU, 2001
51. *Motion Cyclification*. XIII SIBGRAPI, Video Show, 2000
52. *4-8 Subdivision Surfaces*. XIII SIBGRAPI, Video Show, 2000
53. *4-K Meshes*. International Congress on Differential Geometry in memory of Alfred Gray, 2000
54. *Video Cut*. SIBGRAPI'99 Video Show, 1999
55. *2D Textures: an Implicit Drama*. SIBGRAPI'98 Video Show, 1998
56. *Visorama: A System for Visualization of Panoramas*. SIBGRAPI'98 Video Show, 1998
57. *Visualization of Image Quantization*. Computational Geometry 1998
58. *Quantização de Imagens*. SIBGRAPI'97 Video Show, 1997
59. *Animação por Movimento Capturado*. SIBGRAPI'97 Video Show, 1997
60. *Textura com Sistemas de Partículas*. SIBGRAPI'97 Video Show, 1997
61. *Project Memory Head*. SIBGRAPI'97 Video Show, 1997
62. *Blobby Bubbles*. SIBGRAPI'97 Video Show, 1997
63. *Wavelet Paint*. SIBGRAPI'94 Video Show, 1994
64. *Globograph Demo Reel*. SIBGRAPI'91 Video Show, 1991
65. *Fantastic Animation Sample Reel*. ACM Siggraph'87 Film and Video Show, 1987
66. *Happy Birthday ENIAC*. Computer Museum, Boston, 1986
67. *Brazil Paula Z* (opening). Video Festival, Rio de Janeiro, 1984
68. *Graphics*. National Film Board of Canada, 1982
69. *A Imagem no Computador* (1979). SIBGRAPI'92 Video Show, 1992

7.6. IMAGES

1. *David*, Cover dos Anais do NPAR, 2010
2. *HRBF*, Back-Cover dos Anais do SIBGRAPI, 2009
3. *Illumination*,. Back-Cover dos Anais do WTD, 2008
4. *Hierarchical Mesh Segmentation*,. Backcover of SGP Proceedings, 2008
5. *Latin America*,. Back-Cover dos Anais do XVIII SIBGRAPI, 2005
6. *Disk Fan Enhanced*,. Cover of Book Geometric Modeling and Computing, 2004
7. *Gulf of Mexico*,. Back-Cover dos Anais do XVII SIBGRAPI, 2004
8. *Face*,. Cover of Journal of Graphics Tools, 2004
9. *Bunny*,. Back-Cover dos Anais do XVI SIBGRAPI, 2003
10. *Stones*,. Back-Cover dos Anais do XVI SIBGRAPI, 2003
11. *Pepper Bunny*,. Back-cover Proceedings of SIGGRAPH 2003
12. *Parrot*,. Cover dos Anais do XV SIBGRAPI, 2002
13. *Trainy*,. Back-Cover dos Anais do XV SIBGRAPI, 2002
14. *Canoe*,. Back-Cover dos Anais do XV SIBGRAPI, 2002
15. *Butterfly*,. Back-Cover dos Anais do XV SIBGRAPI, 2002
16. *Planets*,. Back-Cover dos Anais do XIV SIBGRAPI, 2001
17. *Transition*,. Back-Cover dos Anais do XIV SIBGRAPI, 2001
18. *Skull*,. Back-Cover dos Anais do XIV SIBGRAPI, 2001
19. *Special Effects with Haltoning*,. Ilustração para o livro “Non - Phorealistic Rendering”, 2001
20. *Color Quantization*,. Back-Cover dos Anais do SIBGRAPI’97, 1997
21. *Motion Capture*,. Back-Cover dos Anais do SIBGRAPI’97, 1997
22. *Noisy Sphere*,. Cover de Journal of Graphical Tools, v. 1, n. 2, 1996.
23. *Diamond House*,. Folha de Rosto dos Anais do SIBGRAPI’96, 1996
24. *Tropical Birds*,. Back-Cover dos Anais do SIBGRAPI’96, 1996
25. *Dois Toros*. Poster, Workshop on Geometric Modeling, IMPA, 1991
26. *Info 87*. Cover, Revista Dados e Idéias, 12(112), September 1991
27. *Miss Liberty*. Cover, Millimeter Magazine, June 1986
28. *EGG*. Cover, Backstage Feature Magazine, August 1986 (special issue on Animation, Image Technologies and Special Effects)
29. *70’s Couch*. Cover, POST Journal, August 1986 (special issue on Next Generation of 3D Special Effects)
30. *Frank*. Cover, Revista Info, June 1985

7.7. EXHIBITS

1. *V-Horus*, Museu Nacional - PUC-Rio, 2019-2020
2. *Alma do Mundo: Leonardo 500 anos*, Biblioteca Nacional, 2019
3. *+Copacabana*, Escola Eleva, March 2017
4. *Indisciplinas*, Casa França-Brasil, November 2016
5. *Olhar 3D*, MAST, Janeiro 2015
6. *Regards dans les espaces de dimension 3*, Paris, Março 2013
7. *VISGRAF Lab*, Feira FAPERJ 2011.
8. *Panoramas do Rio de Janeiro*. Mostra Art Outsiders, Semana do Brasil na França, October 2005
9. *Animação em 5 Movimentos*. Mostra Cinético Digital, Itau Cultural, July 2005
10. *Visorama 3*. Semana da Ciencia, October 2004
11. *Review on Visorama*. MCT, October 2003

12. *Visorama 2*. COPPE - UFRJ, November 2002
13. *Observatório Virtual*. A Paisagem Carioca, Museu de Arte Moderna, RJ, August 2000
14. *Visorama*. II Mostra Petrobras de Realidade Virtual, July 1999
15. *Dithering and Multiscale Implicit Models*. Mostra Retrospectiva de Imagens
XV Congresso da SBC e XX Conferencia Latino-Americana de Informática, August 1995
16. Venice 79 - The Photography. Venice, 1979
17. The First Show of Contemporary Latin American Photography. Mexico City, 1979
18. UERJ Exhibition of Photographs. Rio de Janeiro, 1977

8. CAREER HIGHLIGHTS

8.1. PRIZES AND HONOURS

2nd Prize for Game "Fluxus" in World-Jam 2026, Marble World Labs.

Ranked #41 in Brazil's 2026 Edition of Research.com Best Scientists in the field of Computer Science.

Melhor Trabalho de Mestrado WTD – SIBGRAPI 2025, *A Study on Gaussian Splatting and Neural Fields*

Ranked #44 in Brazil's 2025 Edition of Research.com Best Scientists in the field of Computer Science.

CVPR 2025 Highlight Paper Award - "Tuning the Frequencies: Robust Training for Sinusoidal Neural Networks", IEEE

Ranked #34 among the Best Scientists in the field of Computer Science in Brazil - Research.com, 2023

SIBGRAPI 2022 Best Paper Award - "DirectVoxGO++: Fast Neural Radiance Fields for Object Reconstruction", SBC.

SIBGRAPI 2022 Best Paper Award - "Multiresolution Neural Networks for Imaging", SBC.

In Most Downloaded Computers & Graphics Articles - "*Efficient 3D object recognition using foveated point clouds*", 2020

Ranked in Top 600 Most Influential Brazilian Scientists - Journal Plos Biology, 2020

Top Title in Springer-IMPACT Monograph Series - "From Fourier Analysis to Wavelets" - (downloads and sales), 2018

NVIDIA Research GPU Grant, 2018

Best Computer Graphics/Visualization M.Sc. Dissertation Award (2017), Eduardo Vera Sousa, Luiz Velho (co-advisor), and Leandro A. F. Fernandes (advisor)

Homenagem pelos 60 anos de Carreira, SIBGRAPI, 2016

WIP Honourable Mention Award: "Geometry independent game encapsulation for non-Euclidean geometries", SIBGRAPI, 2015

Member of the Steering Committee of ACM SIGGRAPH Chapter Bogotá, Colombia, 2015.

Member of Fiscal Council, Fundo Patrimonial Endowment do IMPA, 2015.

Recognition Award from IEEE Computer Graphics & Applications, 2015.

Depoimento para o projeto The Communication (R)Evolution, RBS, 2014.

SIBGRAPI 2014 Best Paper Award - "A Sketch-Based Modeling Framework Based on Adaptive Meshes", SBC.

"Image Processing for CG and Vision", top 25% most downloaded eBook of the Springer Collection.

Distinguished Reviewer Award 2012 from the Computers & Graphics Journal.

Member of Comissão de Atividades Científicas - IMPA, 2012

Member elected of Conselho Técnico Científico - IMPA, 2012

SRV 2012 Best Paper Award - "Realistic Shadows on Mobile Augmented Reality", SBC.

SRV 2012 Best Paper Award - "Virtual Table-Teleporter", SBC.

CLEI 2012 Best Paper Award - "Production Framework for Full Panoramic Scenes with Photorealistic Augmented Reality".

ACM Student Research Competition – Semi-Finalist- "Base Mesh Construction using Global Parametrization" of Francisco Ganacim (supervisor), SIGGRAPH. 2012

Appointed Expert Advisor, European Research Council, 2012

Mostra de Vídeos do SIBGRAPI 2011, Prêmio de Melhor Vídeo Técnico – "Real-time Terrain Modeling using CPU-GPU Coupled Computation", 2011

ACM Student Research Competition - Finalist- "Filter Based Deghosting for Exposure Fusion Video" of Alexandre Chapiro (supervisor), SIGGRAPH. 2011

ACM Student Research Competition – Semi-Finalist- "Real-time Terrain Modeling using CPU-GPU Coupled Computation" of Adrien Bernhardt (supervisor), SIGGRAPH. 2011

Mostra de Vídeos do SIBGRAPI 2010, Prêmio de Melhor Vídeo Técnico (júri e público) – *TuioSketch*, 2010.

First prize Technical Video, "Dance to the Music, Play to the Motion", ACM SIGMAD Animation Festival, 2010.

Second Prize M.Sc. Dissertation, "Esquema Híbrido para Mapas de Iluminação", Aldo Zang (supervisor), CLEI Unesco. 2010

ACM Student Research Competition - Semifinalist- "Guitar Leading Band" of Marcelo Cicconet (supervisor), SIGGRAPH. 2010

Ordem Nacional do Mérito Científico, Presidência da República, 2010

Bolsa Nota 10 – Adriana Schulz (supervisor) – FAPERJ, 2010

Member elected of Conselho Técnico Científico - IMPA, 2009

ACM Student Research Competition - Finalist- "Pandeiro Funk" of Sergio Krakowski (supervisor), SIGGRAPH, 2009

SIBGRAPI 2009 Best Paper Award - "Hermite Interpolation of Implicit Surfaces with Radial Basis Functions", SBC.

Professor Catedrático, Instituto Superior Tecnico. 2009

Best M.Sc. Dissertation Award, "Esquema Híbrido para Mapas de Iluminação", Aldo Zang (supervisor), SIBGRAPI, 2009

Member of Advisory Board of SIBGRAPI 2010, SBC.

Bolsa Cientista do Estado, FAPERJ, 2009

SIBGRAPI 2008 Best Paper Award - "PCA-based 3D Face Photography", SBC.

Member of Comissão de Atividades Científicas - IMPA, 2008

SIBGRAPI 2007 Best Paper Award - "Geodesic Bezier Curves: a Tool for Modeling on Triangulations", SBC.

Mostra de Vídeos do SIBGRAPI 2007, Prêmio de Melhor Animação – *Relativistic Visualization*, 2007

Prêmio Cientista do Estado, FAPERJ, 2008-2010

Concurso de Teses e Dissertações da Sociedade Brasileira de Computação, 2007

2o. Lugar Mestrado - orientador da tese de Bruno Madeira

CGI 2007 Video Festival, Best Brazilian Scientific Video, 2007

CGI 2007 Video Festival, Best Brazilian Artistic Video, 2007

Academic Advisor, Brigham Young University, 2007

Keynote Speaker, ISMM, 2007

Keynote Speaker, SIBGRAPI, 2007

General Chair, Computer Graphics International, 2007

Keynote Speaker - "The Mathematics of Visual Computing", 58 SBPC Annual Meeting, 2006.

Keynote Speaker - "Image Collections", XXIX CNMAC, 2006.

SIBGRAPI 2006 Best Technical Poster - Object Reconstruction with Photometric Stereo, SBC.

Top Finalist - ACM Student Research Competition

"Hardware-Assisted CSG Rendering" of Fabiano Romeiro (supervisor), SIGGRAPH, 2006.

Grandes Desafios da Computação no Brasil: 2006 - 2016 (participante selecionado), SBC.

SIBGRAPI 2006 Best Paper Award - "Polygonization of volumetric reconstructions from silhouettes", SBC.

SIBGRAPI 2006 Best Paper Award - "Actively Illuminated Objects using Graph-Cuts", SBC.

SIBGRAPI 2005 Best Papers Award, *GEncode: Geometry-driven compression for general meshes*

SIBGRAPI 2005 Best Papers Award, *Shading via Intrinsic Normal Information for Cel Animation*

Melhor Trabalho de Mestrado WTD – SIBGRAPI 2005, *Multi-Resolution 3D Triangulations*

Mostra de Vídeos do SIBGRAPI 2005, Prêmio de 2º Lugar Animação Técnica, 2005

Prêmio Petrobras de Tecnologia, co-orientador de Ricardo Guerra Marroquim, 2005

Keynote Speaker, Third Eurographics Symposium on Geometry Processing, 2005

SIBGRAPI 2004 Best Papers Award, *Geodesic Paths on Triangular Meshes*

SIBGRAPI 2004 Best Papers Award, *Adaptive Deformable Models*

Mostra de Vídeos do SIBGRAPI 2004, Prêmio de Melhor Animação, 2004

Prêmio Cientista Inovador do Estado, FAPERJ, 2004-2007

Honorable Educador Iberoamericano, Consejo Iberoamericano, Peru, 2004

Concurso de Trabalhos de Iniciação Científica, SIBGRAPI, 2003

2o. Lugar - orientador do trabalho Final de Aldo Nogueira e Elaine Prata

Concurso de Teses e Dissertações da Sociedade Brasileira de Computação, 2003

2o. Lugar Doutorado - orientador da tese de Adailson Peixoto

SIBGRAPI 2003 Best Papers Award, *Moving Least Squares Multiresolution Surface Approximation*

SIBGRAPI 2003 Best Papers Award, *Fast Stellar Mesh Simplification*

Professorship Advisor, Harvard University, 2002

Guest Editor, Computer and Graphics, *Special Issue for SIACG*, 2002
First Ibero-American Symposium in Computer Graphics, Co-Chair of the Program Committee, 2002
Member do Conselho Técnico Científico IMPA, 2002
SIBGRAPI 2002 Best Papers Award, *Approximating Parametric Curves with Strip Trees using Affine Arithmetic*
Tenure Track Professorship Consultant, Princeton University, 2002
ACM SIGGRAPH Advisory Board, Consultant, 2001
Mostra de Vídeos do SIBGRAPI 2001, Prêmio de Melhor Animação na Categoria Técnica, 2001
SIBGRAPI 2001 Best Papers Award, *Algorithmic Shape Modeling with Subdivision Surfaces*
Tenure Track Professorship Consultant, New York University, 2000
Mostra de Vídeos do SIBGRAPI 99, Prêmio de Melhor Animação na Categoria Técnica, 1999
ACM SIGGRAPH Papers Committee Member, 1999, 2000, 2002, 2003
VI CLEI-UNESCO Contest on Masters Thesis, 1999
Second Prize Award: *Um Sistema de Animação Baseado em Movimento Capturado*
orientador da tese de Fernando Wagner da Silva
XII Concurso de Teses e Dissertações da Sociedade Brasileira de Computação, 1999
2o. Lugar Mestrado: *Um Sistema de Animação Baseado em Movimento Capturado*
orientador da tese de Fernando Wagner da Silva
II Prêmio Compaq de Estímulo à Pesquisa e Desenvolvimento em Informática,
Menção Honrosa na Categoria Científica, 1997
Mostra de Vídeos do SIBGRAPI 97, Prêmio de Melhor Animação na Categoria Técnica, 1997
Citado no Who's Who in Science and Technology, Marquis, New Providence, 1997
Citado no Men of Achievement 97, International Biography Center, Cambridge, 1997
Guest editor, special issue on Computer Graphics and Image Processing, Journal of the Brazilian Computer Society. 1996
IX Brazilian Symposium on Computer Graphics and Image Processing, Chair of the Program Committee, 1996
Open Fellowship - University of Toronto, 1991

8.2. PATENTS

1. Continuation of *Method for representing musical scales and Electronic musical device*
Jul, 2016, United States Patent 9,424,826,
2. *Method for representing musical scales and Electronic musical device*
Apr, 2015, United States Patent 9,099,013.
3. *Processo para exibição estereoscópica horizontal baseado em correspondências.*
INPI, 2015
4. *Processo de captura e exibição de imagens estereoscópicas, aplicação e uso relacionado.*
INPI, 2012
5. *Método de organização de dados multidimensional.*
INPI, 2010
6. *Método para representar escalas musicais e Dispositivo electrónico musical*
INPI 2010
7. *Meio Tom Digital*
INPI, 2000
8. *Method for Color Digital Halftoning with Space Filling Curve*
Jan. 11, 1999. United States Patent 5,855,433
9. *Digital Halftoning Luiz Velho, Space Filling Curve*
Feb. 11, 1997, United States Patent 5,602,943.

8.3. SOFTWARE

1. Web Orchestra
INPI, 2017
2. Sistema Revelar
INPI, 2016
3. *EXPO*
INPI, 2014
4. *Reactoon 2D e 3D*
INPI, 2013
5. *Exploratorium*
INPI, 2013
6. *VISORAMA: A viewing device for panoramic images*
filed under the Disclosure Document program - US Patent Office