

Visgraf



Vision
and
Graphics
Laboratory

Research & Development
2004

Research Areas

- Geometric Modeling
- Visualization
- Computer Vision
- Image Processing
- Animation
- Virtual Reality
- Multimedia
- Graphical Interfaces

Current Projects

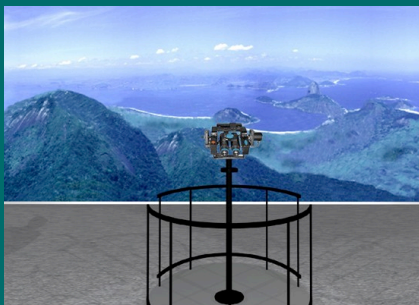
- Visorama
- Vismed
- 3D Photography
- 4th Generation Video
- Terralib / Terra 3D
- MUAN

Visorama

*Complete system for virtual panoramas, including:
hardware, software and applications.*

- Partnership
 - N-Imagem, ECO / UFRJ
- Website
 - <http://www.visgrafimpa.br/visorama/>

Panoramic Installations



Planning

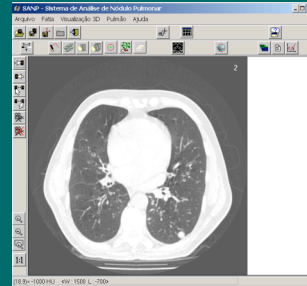
- Current Initiatives
 - Projeto Visorama no Museu
 - Figures in the Landscape (Sergio Motta Award)
 - Visorama / Lumiere (Paris)
 - Installation, (Ricardo Basbaum)
 - Candelaria, (Bruno Viana)
- Future Research
 - Video Panoramas
 - Cut-out Animation
 - Cylindrical Projection

Vismed

Graphics and vision tools for medical applications

- Collaborators
 - UERJ
 - Instituto Fernandes Figueira
- Website
 - <http://www.visgraf.impa.br/Projects/vismed/lung/>

Medical Imaging Application



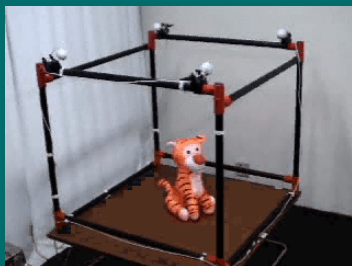
3D Photography

- Systems
 - Structured Light Scanning
 - Camera + Projector, (b.s) BCSL*
 - Space Carving
 - Multiple Cameras / Handheld Camera
 - Silhouette Based
 - Camera + Background + Turntable*
- Collaborators
 - MPI
 - Utah / UFRGS

Structured Light Scanning



Hardware Accelerated Space Carving



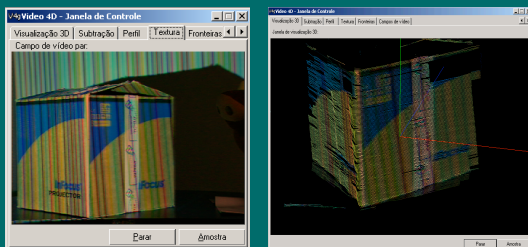
Fourth Generation Video

A platform for 3D video, consisting of an acquisition device, data processing, transmission and visualization modules.

The system generates 3D video in real-time (30 fps) from a wide range of scenes.

- Collaborators
 - Unicamp
 - IME / USP

First Prototype / Software



3D Video – SIGGRAPH 2004



Applications

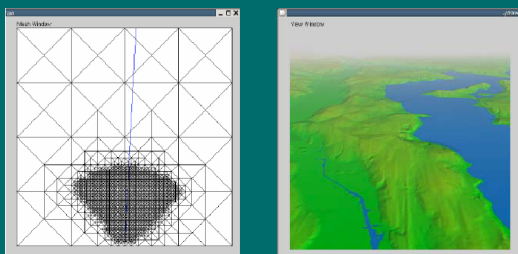
- Video Stereo
- 3D Object Scanning
- Environment Reconstruction
- Face Tracking
- Shape Recognition

TerraLib / Terra3D

Real-Time Terrain Visualization from Large Geographical Databases

- Partnership
 - INPE
 - Tecgraf
- Experiments
 - Giga Network

Real-Time Terrain Visualization



Large Databases of Satellite Imagery

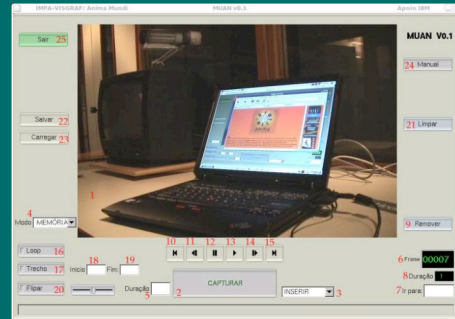


MUAN

*Stop Motion Animation System
for Linux*

- Partnership
 - Anima Mundi
- Applications
 - Education (Anima Escola)
 - Production Tool

Software



Thanks!