A Panoramic View on Visorama

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Outline

- Panoramic Images
- The Visorama Framework
- Projects

Real Panoramas

- Paintings / Wall
- Photographs / Video

Virtual Panorama

Making a Panorama

- Shooting
- Registering
- Stitching

Storing a Panorama

- Cylindrical Panorama Model
Viewing a Panorama

- Virtual Camera
- Image Warping

The Visorama Framework

- Virtual Reality based on Panoramas
  - Visual-Realism
  - Immersive
  - Natural Interaction
- Complete System
  - Dedicated Hardware
  - Viewing Software
  - Authoring Environment

Equipment Design

- Binocular device
- Stereo Sound
- Degrees of freedom
  - Fixed viewpoint *(at a given time)*
  - Pan and tilt rotation
  - Zoom

Human-Computer Interface

Same interaction as non-virtual devices

- Can be used like these devices
  - Augmented reality
  - Virtual reality
- Familiar interaction
  - Intuitive
  - Natural

Effective Virtual Reality

- Based on panorama metaphor
  - Viewing restricted to a point increases immersion
- Avoids difficulties of other VR systems
  - Prevents invalid operations
  - No motion feedback required
  - Simple and intuitive interaction
  - Easy determination of focus of attention

Visorama System

- The Visorama Device
  - Executes during user interaction
  - Hardware and software components
- Authoring Environment
  - Creation of virtual world
  - Specification of user interactions
Hardware Architecture

Observation Gear

Rotating Head

An Eye for Detail

• Adaptive Multiresolution Panoramas

Narrative Elements

• Cognitive
  – Real / Virtual
• Space
  – Near / Far
  – Here / There
• Time
  – Past / Present / Future
• Depiction
  – Photographic / Painterly

Projects

• Rio: Past and Present
• Viso-NBP
• Cybernetic Observatory
• Figures in the Landscape
• Rear Window
• Candelaria
• Visorama-Lumière
Rio: Past and Present

- Exhibits

Sugar Loaf / Corcovado

Recreating the Past

Viso-NBP

- Project for Itau Cultural (2002)
  - Collaboration with Ricardo Basbaum
- NBP series
  - (New Bases for Personality)

Installation Plan

Outside View
• Inside View

Cybernetic Observatory

• Project for Rio’s Secretary of Culture
  – New City Museum

• Permanent Space
  – Exhibit
  – Website
  * Changing Content

• Installation Plan

• Front View

• Back View

Figures in the Landscape

• 5º Prêmio Cultural Sergio Motta (2004)
  – Artes Interativas (André Parente)

• Multiscale Journey
  – Inside the Detail
• Installation Profile

• Simulation of Exhibit

• Multiresolution Image Mosaics

• Navigation Levels

1. Urban
2. Nature
3. Faces

Rear Window

• Based on Alfred Hitchcock’s Film

• Interactive Movie Project
  – Loft Space + Building Façade
  – Mystery Plot
  * Image and Sound

• Place of the Action
• Multi-thread Narrative

Candelaria

• Project submitted to CCCB
  – Collaboration with Bruno Vianna

• Interactive Docu-Drama
  – Chacina da Candelária

• Situation Map

• Panoramic Background

• Animated Cut-Outs

Visorama-Lumière

• Project for 6th @rt Outsiders
  – Paris
  – September - October of 2005

• Installation
  – Panoramic photographs (1900 and 1904)
  – Lumière Brothers
  – Périphote camera
• http://www.visgraf.impa.br/visorama/