Expressive Trajectories

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IMPA

the Project

Interactive Digital Art / Contemporary Dance

- Interdisciplinary
  - Vision
  - Graphics
  - Animation
- New Media!

Vision

Choreographisms
X-Motion
from Style ...

... to Expression

Outline

• The System
  - X-Motion
• The Interface
  - Choreographisms
• The Experiment
  - Unsquare Dance
the X-Motion System

- Authoring
- Real-Time Interaction

Architecture

Sensing Module

- Data Input
  - Camera
  - Other Devices
- Pre-processing

Real Time
Control & Execution

- Programming Module
  - Control Interface
  - Data Management

- Motion Engine
  - Execution
    - Finite State Machine

Graphics Interpretation

- Visual State
  - Motion Paths
  - Parameters

- Procedural Support
  - Dynamic Shapes

- Rendering
  - OpenGL
Choreographisms

- Graphics Interpretation
  - Motion Paths
    - Markers on Dancer's Body
  - Parametrized Curves
    - Time
    - Space
- Visual Scores
- Dynamic Shapes
  - Spatial Structure
    - Shape
  - Temporal Structure
    - Duration
  - Behavior
    - (inter) Action
Spatial Structure

- **Brush Type**
  - Geometric
  - Texture

- **Granularity**
  - Connected
  - Disconnected

Temporal Structure

- **Synchronicity**
  - Absolute
  - Relative

- **Persistence**
  - Temporal
  - Spatial

Behavior

- **Mapping**
  - Projection
  - Warping

- **Animation**
  - Local
  - Global
Visual Scores

• Interaction Dynamics
• Timeline Authoring

Finite State Machine

- Graphic States
- Transitions

Graphic States

• Instancing Dynamic Shapes
  
  - (Motion Path, Parameters) + Graphics Program

Transitions

• Events

Direction Change

Path Crossing

• Expressions

(time < 10 & p.crossed)
Unsquare Dance

- Experiment
  - Test the System
  - Video Production

- Art Piece (by Analivia Cordeiro)
  - Choreography
  - Performance

The Setup

- Studio for Computational Vision - VISGRAF

The Plan
The Choreography

Visual Score I (Analivia)
- Movements
- States

The Performance
Video - Visual Score I

Visual Score II (Alice)
Behind the Scenes

- Making-Off
People

Analivia Cordeiro  
Dance

Alice Bodanzky  
Design

Luiz Velho  
Direction

Julio Lucio  
Development

Ilana Paterman  
Editing

Conclusions

• Rewarding Research
• Submissions
  - Eurographics John Lansdown Award
  - SIGGRAPH 2008
  - Computational Aesthetics
• Future Work
  - Lots! (don’t get me started ;-) )

To be continued....
The End