TextAlive: Integrated Design Environment for Kinetic Typography

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Kinetic Typography
Kinetic Typography

• A style of graphical expression to **move and reshape text** in videos

• Prior work focuses on **graphical** aspects, most augmenting text-based communication
  
  [Lee, 2006] [Forlizzi, 2003] [Mizuguchi, 2005] [Strapparava, 2006]

**This work focuses on**

**Animating lyric text** in synchrony with **music**

**Synchronization** is difficult & takes long time
Authoring with **general tools**

.Tables:

- Set **typographic parameters per character**
  - e.g. Font, Size, Color, …

- Specify **kinetic behavior from scratch**
  - e.g. Timing, Motion path, …

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**Problem:** Enormous amount of manual effort
Authoring with **specialized tools**

黯 Set **typographic parameters per character**
  e.g. Font, Size, Color, ...

黯 Specify **kinetic behavior from scratch**
  e.g. Timing, Motion path, ...

😊 Choose motion from **templates** and tweak parameters
Authoring with specialized tools

😊 Choose motion from templates

 Depository

 Manual labor remains

 😞 Lack of flexibility

to specify lyric timings

 should be more effortless and flexible
TextAlive

Problem

- Manual effort
- Lack of flexibility

Proposed Method

- Automatic Video Composition
- Live Programming of Templates
- Interactive Editing

For designers

For programmers

Integrated Design Environment
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AUTOMATIC VIDEO COMPOSITION + INTERACTIVE EDITING
Demonstration

- Automatic timing estimation
- Interactive timing correction
Automatic timing estimation

Lyrics + Song → Playable video

dramatically reduces the manual effort
Interactive timing correction

Timing correction  Interactive update

Estimation errors can be easily corrected
Demonstration

- Structure-aware editing
Structure-aware editing

Sliding
この世界のメロディー

Sliding + Hopping
この世界のメロディー

Sliding + Hopping + Karaoke
この世界のメロディー

Multiple templates can be assigned to phrases/words/characters
TextAlive workflow (for designers)

- Automatic video composition
- Interactive timing correction
- Structure-aware editing

Interactive editing of Kinetic Typography videos

: Data flow or dependency
: User interaction
TextAlive workflow (for designers)

Am I in the wrong session? All of these fancy GUIs, how are they related to the “Programming Environments”???
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LIVE PROGRAMMING OF ANIMATION TEMPLATES
Video = $f(t)$ without side effects

1. for (all templates)
   - manipulate rendering parameters of assigned text units

2. for (phrases) transform the coordinate system
   - for (words) transform the coordinate system
     • for (characters) transform the coordinate systems;
       - render the character.

3. for (graphic units) render graphics
Demonstration

• Live programming of animation templates
Live Programming

Smooth transition between **authoring** and **programming**

For programmers

CHI2015:TextAlive

Video authoring  ———  Template development
Dynamic generation of GUI widgets

Comments to **public fields** generates GUI widgets bound to the state information

**for programmers:**

enables easy template **debugging**

**for designers:**

enables interactive **parameter tuning**
TextAlive workflow (for programmers)

- Audio file (song or narration) MP3, MS WAV
- Lyric or transcription Plain text

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Automatic video composition

Kinetic typography video JSON

Animation templates

Live programming

GUI widgets generation

Live programming of Kinetic Typography videos

Data flow or dependency

User interaction
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PRELIMINARY USER STUDY
Experimental setup

Designers and casual users

Programmers

3 have lots of experience, 2 have a little bit of experience, 2 have no experience of using video authoring tools.

Each participant was asked to create a video
Results
Lessons learned: good side 😊

• Automatic video composition is nice since “we no longer need to create but just edit the video.”
• Animation templates suggest potential applications of real-time video creation such as “text jockey.”
• No need to stop the video = fluid experience
• “Timeline” at the heart of audio-video synchronization

Integrated interfaces worked as expected

especially for programmers

(this should be of interest if you make something similar)
Lessons learned: future work 😐

• Having a variety of animation templates is good
• “Stage” should allow more direct manipulation
• (Programming needs training)

Collaboration between designers and programmers seems to be the key
(and should be an interesting follow-up work)
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CONCLUSION
TextAlive

Automatic Video Composition
For designers

Interactive Editing

Live Programming of Templates
For programmers

Integrated Design Environment

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TextAlive
(completely rewritten in JavaScript!)

http://textalive.jp

Automatic Video Composition
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