TextAlive: Integrated Design Environment for Kinetic Typography

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Kinetic Typography

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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

This work focuses on

**Animating lyric text in synchrony with music**

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

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

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

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

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

- 😞 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

😊 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

Integrated Design Environment

For designers

For programmers
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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

Estimation errors can be easily corrected
Demonstration

• Structure-aware editing
Structure-aware editing

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

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

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

Interactive editing of Kinetic Typography videos

→: Data flow or dependency
←: User interaction
Interactive editing of Kinetic Typography videos

Am I in the wrong session? All of these fancy GUIs, “Programming Environments”???

How are they related to the workflow (for designers)?
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LIVE PROGRAMMING OF ANIMATION TEMPLATES
Video = $f(\text{time})$ without side effects

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

   ```
   // Make this char hop!
   float progress = Math.min((float)(time - c.startTime)/hopTime, 1f);
   c.rendering.tx.translate(0, (float)-hopHeight * Math.sin(progress*Math.PI));
   ```

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*
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
- Kinetic typography video JSON
- Animation templates

TextAlive default GUI

Automatic video composition

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

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

Integrated Design Environment

Automatic Video Composition
For designers

Live Programming of Templates
For programmers

Interactive Editing
TextAlive
(completely rewritten in JavaScript!)

http://textalive.jp

Automatic Video Composition
For designers

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Live Programming of Templates
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Integrated Design Environment