

*

An Experimental Study on the Effectiveness of Storyboard Surrogates in the Meanings Extraction of Digital Videos

(Hyun-Hee Kim)**

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가 가

가

가

(0.45)가

(0.40)

가

ABSTRACT

This study is designed to assess whether storyboard surrogates are useful enough to be utilized for indexing sources as well as for metadata elements using 12 sample videos and 14 participants. Study shows that first, the match rates of index terms and summaries are significantly different according to video types, which means storyboard surrogates are especially useful for the type of videos of conveying their meanings mainly through images. Second, participants could assign subject keywords and summaries to digital video, sacrificing a little loss of full video clips' match rates. Moreover, the match rate of index terms (0.45) is higher than that of summaries (0.40). This means storyboard surrogates could be more useful for indexing videos rather than summarizing them. The study suggests that 1) storyboard surrogates can be used as sources for indexing and abstracting digital videos; 2) using storyboard surrogates along with other metadata elements (e.g., text-based abstracts) can be more useful for users' relevance judgement; and 3) storyboard surrogates can be utilized as match sources of image-based queries. Finally, in order to improve storyboard surrogates quality, this study proposes future studies: constructing key frame extraction algorithms and designing key frame arrangement models.

open video digital library, storyboard surrogates

* 2006 (KRF-2006-321-H00031)

** (kimhh@mju.ac.kr)

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1.1

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가

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(Mu

and Marchionini 2003).

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OPAC

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1.2

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1.3

1) :

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2) :

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3) :

가

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4) :

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2.

2.1 . Li (2000)

. Christel 가 , 가 , (narration)

(1997) 가 (Robertson (1998)

) . (2005) 가 .

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Hughes (2003) 가 가 (

(what the video was about)

가 (what the video was

like)

. Wildemuth

(2002)

(surrogates)

. Robertson . Stachowicz (2002) 6

(1998)

(thumbnails)

82%

. Cristel Warmack 6%

(2001)

(Browne and Smeaton 2005). IBM
QBIC

(Niblack et al. 1997).

. Lyer Lewis

(2006)

가

56%
89%

가

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2.2.1 가

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2.2.2

1) 가? 가?

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Open Video Digital Library(OVDL,
www.open-video.org)
12 (Marchionini
and Geisler 2002).

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OVDL

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1) OVDL

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KMPlayer

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비디오코드	영상초록	비디오코드	재생시간	전체 클립
NO.101	유형 1	NO.101	4분 47초	링크
NO.102	유형 1	NO.102	2분 17초	링크
NO.103	유형 1	NO.103	4분 55초	링크
NO.104	유형 1	NO.104	2분 36초	링크
NO.105	유형 1	NO.105	3분 41초	링크
NO.108	유형 1	NO.108	4분 01초	링크
NO.109	유형 1	NO.109	4분 18초	링크
NO.110	유형 1	NO.110	3분 31초	링크
NO.112	유형 1	NO.112	2분 46초	링크
NO.113	유형 1	NO.113	2분 51초	링크
NO.114	유형 1	NO.114	4분 02초	링크
NO.115	유형 1	NO.115	10분 00초	링크

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KMPlayer가

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Open Video Digital Library

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가 (0.28, 0.50)가 (0.39, 0.57)
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3.2 가 2)가 : 가 1 2
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1) : ,가 1 가 2가
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가 (< 1>).
< 1> “ ()
)” “ 1[()]
1, vs. 3[()]”, “ 1[()]
3 vs. 3[()]”, “ 2[()] vs.

< 1 >

()				
()	()	()	()	()
1() (4)	0.51	0.50	0.77	0.76
2(+) (4)	0.46	0.42	0.60	0.61
3() (4)	0.39	0.28	0.57	0.50
()				
	F			
()	3.61		0.03*	
()	16.06		0.00**	
()	6.13		0.00**	
()	6.89		0.00**	
()				
1[()] vs. 2[()]	0.63	1[()] vs. 2[()]	0.03*	
1[()] vs. 3[()]	0.02*	1[()] vs. 3[()]	0.00**	
2[()] vs. 3[()]	0.35	2[()] vs. 3[()]	0.95	
1[()] vs. 2[()]	0.13	1[()] vs. 2[()]	0.12	
1[()] vs. 3[()]	0.00**	1[()] vs. 3[()]	0.00**	
2[()] vs. 3[()]	0.01*	2[()] vs. 3[()]	0.36	

** 0.01

* 0.05

3[()]” “ 1[()] vs.
 2[()]” “ 1[()]
 vs. 3[()]” “ 1[()]
) vs. 3[()]”

3.2.2

(0.45)가

(0.40)

가

0.05

가

1) : t-

가

(< 2>).

t-

가

(< 2>).

2)가 : 가 3

3.2.3

“가 3:

가

” 가

1) : t-

t-

가

< 2> t- (1)

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	t	
() vs. ()	3.04	0.00**

< 3> t- (2)

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()	()	()	()		
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	T			T	
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가 t- 3.3

가 3.3.1

(< 3 >). 9

2)가 : 가 4 5 (64.3%)

“가 4: 가 4 (28.6%)

.1 (7.0%)

가 ” “가 5:

가 (< 4 >).

” 가 t- 3.3.2

, 가 4

가 0.05

가 가 “ ” “ ’

3>). 가 (< 3 >).

가 가 ” “ ’

가 .가 5

가

가 0.05

가 가 ” 가

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	4	9	()
()	4	9	1
(%)	28.6%	64.3%	7.0%

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(Lyer and Lewis, 2006).

가

(:0.45,
:0.40)가

(
:0.64, :0.62)
가 (0.50)

82%

(Stachowicz, 2002).

(0.45)가 (0.40)

가

가

가

가

가

가

가

가 61%

가

가 가

5.

1 (: 0.51, : 0.50)
3 (: 0.39, : 0.28) 가

가

가

(0.45)

(0.40)가

(0.50)

가

가

가

가

OPAC

가

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 』 8(8): 1032 - 1041.
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 』 6:41 - 67.
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 371.

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