WICED 2022

Workshop on Intelligent Cinematography and Editing

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Preface

Over the past ten years, the Workshop on Intelligent Cinematography and Editing (WICED) has established an active community around the research and development of computational methods to analyze, understand, and create filmic arts. As multimedia technologies advance, this field has pursued the exploration of thematics such as film in virtual and augmented reality, theater, games, live television, drones, and more. Sharing venues with well-established conferences in AI, computer graphics, entertainment, interaction, etc. WICED has carved out a unique place at the crossing of these domains which all share a central concern related to cinematography.

At this very special tenth anniversary, there are many things to celebrate and be grateful for. We are delighted to host this year's edition with 6 original papers and 3 invited talks, the announcement of an automated editing competition on a BBC video dataset soon to be released, and a panel to discuss long-term prospects of the workshop. We thank the many members of the steering, organizing, and program committees who have kept the workshop going throughout the years. And we are excited and hopeful that the community will continue to grow and thrive for the many years to come.

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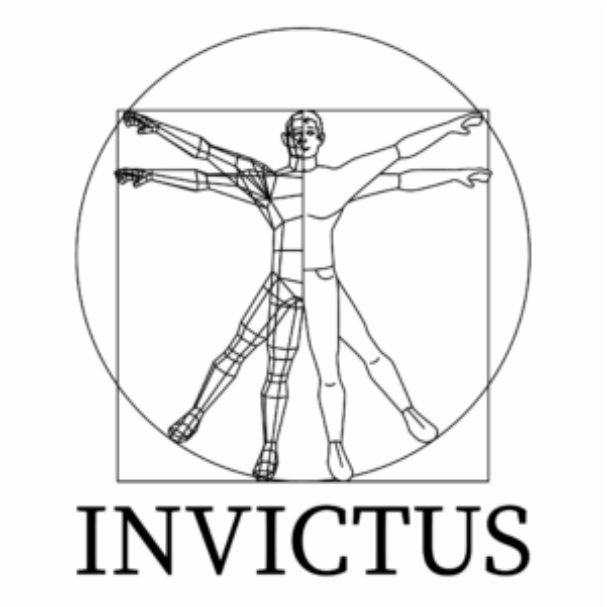

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Write-A-Video: Computational Video Montage from Themed Text

Miao Wang, Guo-Wei Yang, Shi-Min Hu, Shing-Tung Yau, Ariel Shamir

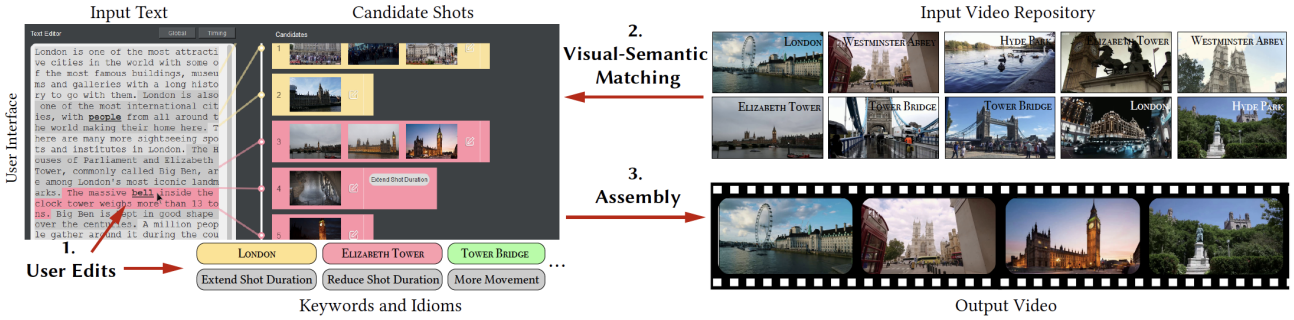

Figure 1: *The general Write-A-Video pipeline proceeds in three steps: (1) the user writes text and edits the attributes of text segments via a novel interface (highlighted in pink in the Text Editor), (2) candidate shots are retrieved automatically from an input video repository using visual-semantic matching, and (3) final movie shots are assembled by optimizing cinematographic rules with user-specified idioms.*

Abstract

We present Write-A-Video, a computational video montage method that generates video from themed text. Given such text and a related video repository either from online websites or personal albums, our method helps the user generate a video montage in a simple manner. The resulting video illustrates the given narrative, provides diverse visual content, and follows cinematographic guidelines. The process involves three simple steps: (1) the user provides input, mostly in the form of editing the text, (2) the system automatically searches for semantically matching candidate shots from the video repository, and then (3) assembles the video montage. Visual-semantic matching between segmented text and shots is performed by cascaded keyword matching and visual-semantic embedding, which has better accuracy than alternative solutions. The video assembly is formulated as a hybrid optimization over shots, considering temporal constraints, cinematography metrics such as camera movement and tone, and user-specified cinematography idioms. We present a novel interface for video montage creation where users operate on text instead of manipulating video frames. User study results demonstrate that all energy terms used in video assembly contribute meaningfully to the quality of the montage. Users without video editing experience are able to generate appealing videos using our method. Moreover, the time needed to create a video from themed text using our technique is significantly lower than that required by a professional video editor using commercial frame-based software, while the results are of similar quality.

1. Introduction

This paper was previously published as [WYH*19].

References

[WYH*19] Wang M., Yang G.-W., Hu S.-M., Yau S.-T., Shamir A.: Write-a-video: Computational video montage from themed text. *ACM Transactions on Graphics, (Proceedings SIGGRAPH-Asia) 38*, 6 (2019), Article No. 177. 1

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R. Ronfard and H.-Y. Wu (Editors)

Film directing for computer games and animation: Where do we go from here?

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Abstract

Over the last forty years, researchers in computer graphics have proposed a large variety of theoretical models and computer implementations of a virtual film director, capable of creating movies from minimal input such as a screenplay or storyboard. As a follow-up to my recent state-of-the-art paper, I will attempt to identify promising avenues and hot topics for future research in intelligent cinematography and film editing towards this long-term goal.

CCS Concepts

• ***Applied computing*** → ***Media arts;***

1. Introduction

This paper was previously published as a state-of-the-art report [Ron21].

References

[Ron21] RONFARD R.: Film Directing for Computer Games and Animation. *Computer Graphics Forum 40*, 2 (May 2021), 713–730. Eurographics State of the Art Report (STAR). 1