

Multi-Snapping Tool for Creating Snapshots From A Video Clip

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Abstract: It is a unified framework for generating single as well as multiple (many) high quality still images (“snapshots”) from a video clip. The system allows the user to specify the desired start and end time and the desired operation for creating the output images such as selection of best focus. Below there are number of screenshots of different video clips shown to illustrate the utility and flexibility of our system.

Keywords: Framework, Snapshots, Screenshots, Flexibility.

I. INTRODUCTION

The world is getting progressed in the field of multimedia and animations. And along with this there has been a great development of the tools made to work with these multimedia tools. This work includes not only with playing, viewing or doing such other basic operations with these multimedia files like play, pause, stop etc. Often the most important photographic moments are unexpected and difficult to predict. In such a situation, a good alternative is to take a video to capture the whole action. This is an increasingly available option as practically all cameras and phones today have a video mode. The video provides a temporally dense sampling of the action that ensures not only that the right moment is never missed, but that it can be revisited later on. In this work, it has been consider the problem of creating a Single and multiple still images—snapshot—from a video clip. The snapshots that the system produces have higher resolution, lower noise, and less blur than the original video frames. The system model gives option for single and multiple snapshots that summarizes the motion of salient objects and actions. The input to the system will be video. For a single snapshot the user can capture the ongoing frame. For the multiple snapshots the tool requests the user to provide with the start and the end time duration along with the time interval. The time interval helps to guide the system as to after what time the frame should be taken. These snapshots are then stored in a pattern folder lock. The proposed algorithm first aligns the neighboring frames to the reference frame and then combines the frames using algorithm which is based on C# programming language. The system mainly focuses on providing detailed features of the video and it has been developed in a programming language that is platform independent. The system has been designed mainly for CCTV footages and also for crime investigation purpose.

II. RELATED WORK

Literatute Survey

The main aim has been made on maintaining this application specific to its promised functionality. The application has been designed to meet the useful necessities of the user, unlike other application where only basic security functionalities are provided. It provides functions that help to enhance functionality, specifically speaking to tackle situation where a snapshot is very much needed.

System Analysis and Design

System analysis is an explicit formal inquiry carried out to someone (referred to as a decision maker) identify a better course of action and make a better decision that might otherwise be made. System analysis usually has some combination of the following: identification and re-identification of the objectives, constraints and alternative course of action, examination of probable consequences of the alternatives in terms of cost, benefits and risks, presentation of results in a comparative framework so that the decision maker can make an informed choice. The comparison and ranking are made in terms of net benefits (benefits minus cost) or the ratio of benefits to cost. In risk-BENEFIT ANALYSIS, cost (in monetary units) is assigned to each risk so as to make possible a comparison of discounted sum of this cost that is predicted from the result. Thus, system analysis is the process of investigating a system, identifying problem and using the information to recommend improvement in the system.

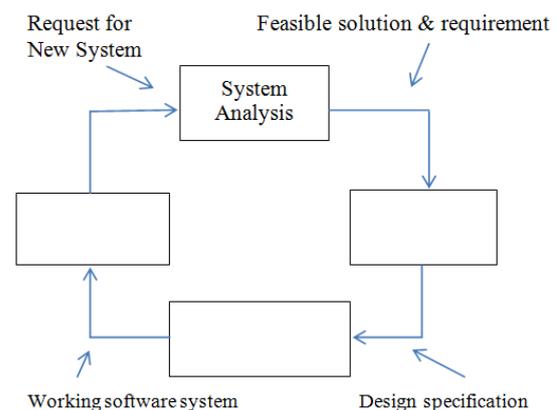


Fig. 1 Stages in building an improved system

Proposed Snapshot Algorithm

1. Get the width and height of the media element.
2. Declare a Render Target Bitmap that converts a Media. Visual Object into bitmap.
3. Declare a Visual Brush that helps paints an area.
4. Declare a Drawing Visual and Drawing Context.
5. Initialize the Render Target Bitmap, Visual Brush, Drawing Visual and Drawing Context.
6. Use Jpeg Bitmap Encoder and get bitmap frame from the Render Target Bitmap.
7. Using Memory Stream save the Bitmap using jpeg.

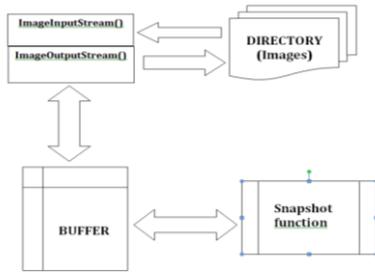


Fig. 2 Data structure and design

Implementation

Module description:

The system is divided into 4 modules

1. Receiving input.
2. Checking and verification.
3. Specifying time.
4. Generating output.

Below is the input as a video given to the system and user is requested to provide the desired start and end time along with time interval.

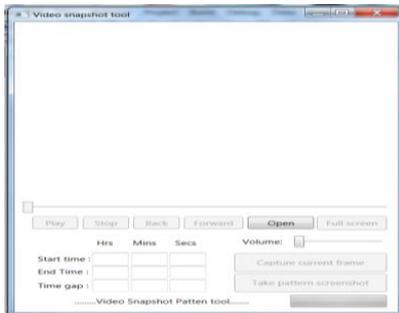


Fig. 3 GUI of the System



Fig. 4 Media element loaded



Fig. 5 Multiple Snapshots in progress

The extracted frames are stored in pattern folder lock, they are as follows

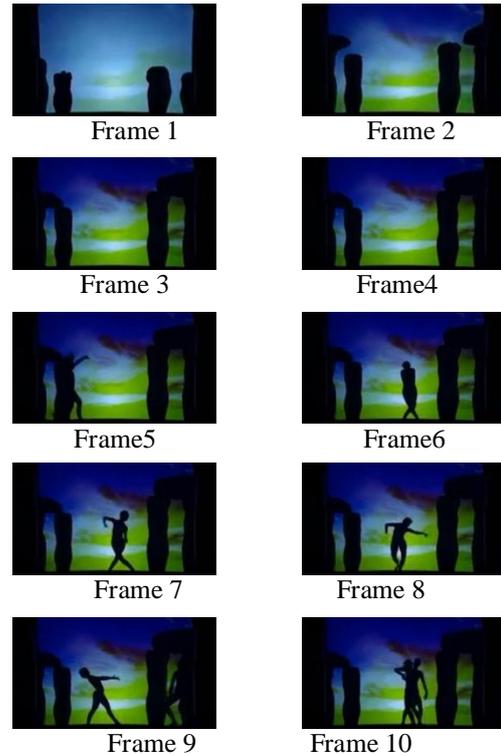


Fig 5. Multiple Snapshots

III. CONCLUSION

In summary, the system will give new direction to the field of multimedia which will help people for the real time application such as extracting minute details from CCTV footages, crime investigation and for other subjective application. And also it is better than the other snapping tools, as it has an ability to take multiple snapshots just by giving the start time, end time and time interval. And depending on the inputs it will generate the multiple snapshots.

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REFERENCES

- [1] KalyanSunkavalli, Student Member, IEEE, Neel Joshi, Member, IEEE, Sing Bing Kang, Fellow, IEEE, Michael F. Cohen, Senior Member, IEEE, and Hanspeter Pfister, Senior Member, IEEE "Video Snapshots: Creating High-Quality Images From Video Clips", 2012.
- [2] R. Y. Tsai and T. S. Huang, "Multiframe image restoration and registration," in Advances in CVIP, 1984.
- [3] J. Fiss, A. Agarwala, and B. Curless, "Candid portrait selection from video," ACM Transactions on Graphics, vol. 30, pp. 128:1–128:8, Dec. 2011.
- [4] L. Itti and P. Baldi, "A principled approach to detecting surprising events in video," in Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, 2005, pp. 631–637.
- [5] L. Teodosio and W. Bender, "Salient video stills: content and context preserved," in Proceedings of ACM International Conference on Multimedia, 1993, pp. 39–46.
- [6] Agarwala, M. Dontcheva, M. Agrawala, S. Drucker, A. Colburn, B. Curless, D. Salesin, and M. Cohen, "Interactive digital photomontage," ACM Transactions on Graphics, vol. 23, no. 3, pp.294–302, 2004.