

Text-based Video Blogging

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ABSTRACT

A video blogging system has been developed for easily producing your own video programs that can be made available to the public in much the same way that blogs are created. The user merely types a program script on a webpage, the same as creating a blog, selects a direction style, and pastes in some additional material content to create a CG-based video program that can be openly distributed to the general public. The script, direction style, and material content are automatically combined to create a movie file on the server side. The movie file can then be accessed by referring to an RSS feed and viewed on the screens of various devices.

Categories and Subject Descriptors

H.3.5 [Information Storage and Retrieval]: Online Information Services - web-based services.

General Terms: Design.

Keywords: Vlog, Blog, Web-casting, APE, TVML.

1. INTRODUCTION

The weblog or blog has entered the mainstream media. It is a very easy way for almost anyone, even the technically challenged to create a personal websites that can be accessed by the masses via the Internet. Blogs were initially conceived as a text-oriented medium, but it has expanded and has inspired a variety of other blog-like developments based on other media including photologs for sharing photographs, podcasts [1] for distributing audio content, and video blogs (vlogs) [2] for easily sharing video content. Yet there are still a number of issues that must be addressed if vlogging is to catch on and become as popular as blogging. First and foremost is the difficulty of producing video content. Although the vlog provides a convenient method for making one's content available, it does not address the fundamental issue of creating the video content in the first place. While it is easy enough to create a webpage or a blog by simply typing in text, it is not that easy for the typical user to create video content for a vlog, and therein lies an enormous gap between the two technologies.

To solve this issue, we developed a scheme for producing video content that is just as easy and intuitive as creating a blog and a way for making this video content available to the general public [3]. Now we have improved the former system and constructed a prototype based on that system that enables users to

create and view their own video content without any special software capabilities on the client side by integrating a browser-based script writing environment, server-side video production, and a streaming movie distribution function. With our system, the user just types a script, selects a prepared direction style, and uploads the file. The script is then automatically integrated with computer graphics and synthesized voices to create a video program that can be placed on the Internet for anyone to access and view.

2. SYSTEM OVERVIEW

Figure 1 shows the program creation and distribution flow for the system. A user writes a script on the client side in a browser window just the same as a blog is created, then a video movie is automatically generated using the script on the server side. This permits ordinary users to easily create video programs without any special video production software, and enables the video content to be distributed in a wide variety of video formats. We describe below how programs are produced and distributed using the prototype system.

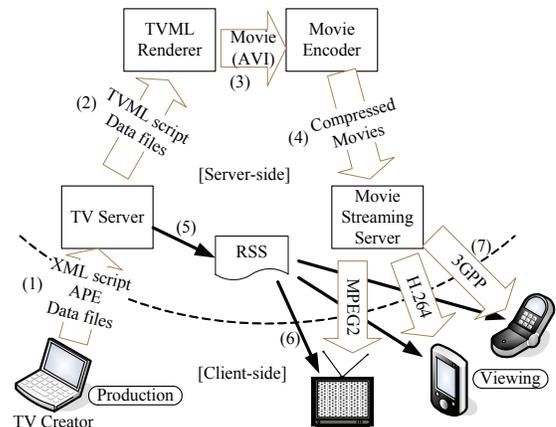


Figure 1. Program creation and distribution flow

2.1 Program Creation Based on Script Descriptions

A user creates a video program very easily by typing a script and linking materials in a browser-based wordprocessor environment called TV Creator, as illustrated in Figure 2, which is just the same as authoring a blog. The script format is simple and intuitive as one can see in Figure 2. The title: and subtitle: lines are the headings that will be displayed for the program. A: and B: at the beginning of some lines represent the lines spoken by speakers A and B, respectively. The notation subimage: pho.jpg means that a jpeg image (pho.jpg) will appear at this point in the program, and

the instructions in parenthesis describe the actions or facial expressions of the speakers, or camera actions.

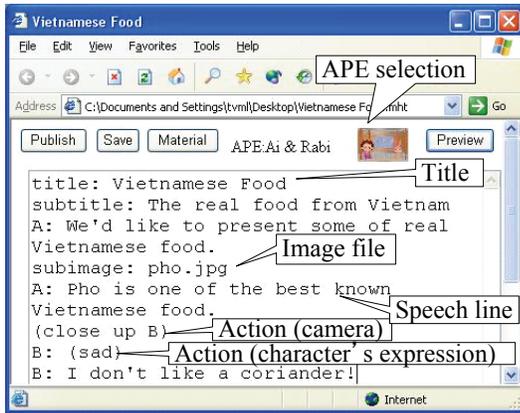


Figure 2. TV Creator

Program directions are determined by selecting a direction style sheet called an APE (Automatic Production Engine) [4]. This style sheet is used in the same way that design templates are used to define the style of a blog. Figure 3 outlines how video programs are actually generated by APE style sheets. First, the user types a script on the TV Creator screen as we have already described, and this script is then output by TV Creator in XML format. The XML script is then converted to a script language called TVML (TV program Making Language) [5] by APE. The TVML script language was specifically designed for representing video content, and completed video programs including computer graphics, synthesized voices and data files are generated by playing a TVML script file in a software playback system called TVML Player. APE is essentially a direction style sheet endowed with sets of TVML templates, so TVML endowed with directions is output as a result of the conversion process.

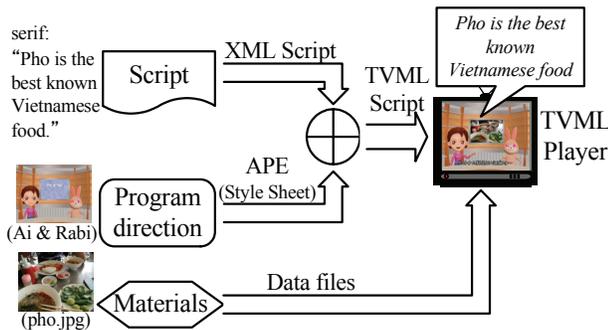


Figure 3. Process of creating program using APE

2.2 Movie rendering and encoding on the server side

The XML script typed on TV Creator, the APE style sheet, and material data files are uploaded as a set to a TV Server in order to make programs produced by TV Creator available to the public (Fig. 1(1)). The TV Server combines the XML script with APE style sheet to produce a TVML script that is sent along with required data files to a software-based processor called the TVML Renderer (Fig. 1(2)). The TVML Renderer drives the TVML Player to output a movie file, which is forwarded to the Movie

Encoder (Fig. 1(3)). The Movie Encoder encodes the movie file into various popular movie formats which are sent to a Movie Streaming Server where the video content can be accessed and viewed by the public using various kinds of devices (Fig. 1(4)).

2.3 RSS Feed and Program Distribution

The TV Server has the ability to extract titles and headlines from the uploaded XML scripts and create RSS feeds that include information about the producer of the video content and the production date (Fig. 1(5)). Since information can be automatically extracted from the XML script data, the user does not have to enter any kind of extraneous data for RSS syndication. By providing a number of different movie encoders tailored for different types of devices, and distributing the metadata of video content as RSS feeds (Fig. 1(6)), the video content can be made available in formats adapted for iPods and other handheld devices, as well as personal computers, set-top boxes, and various computer-based visual machines (Fig. 1(7)). Figure 4 shows a video program developed on the prototype system being played back on an iPod.



Figure 4. Video program being played on iPod

3. CONCLUSIONS

We have developed a video blog system that makes it extremely easy to create video programs, and distribute them to the general public without special software on the client side. These capabilities make it fun and easy for ordinary users to produce and openly distribute their own video content over the Internet, so we anticipate that our video blogging system will catch on and may become just as popular as text-based blogging. In future work, we plan to investigate the feasibility of distributing rendering and encoding loads.

4. REFERENCES

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