Automatic Storytelling in Comics: a Case Study on World of Warcraft

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INTRODUCTION

⚓ Nowadays, people share and preserve their gaming adventures on the Internet.

⚓ This paper presents:

- An automatic comic generation system
- An approach that summarizes players' interactions in the virtual world for storytelling
- A user interface with interactive editing functions for users to create their own comics.

METHODOLOGY

⚓ Game Logs and Screenshots

⚓ Frame Selection

- Estimating n, number of images required for the desired comic
- Evaluating the significance scores of all images
- Selecting the estimated n images from the image pool

⚓ Layout Computation

- We design an algorithm (see Fig. 1) to categorize the selected images into groups.

  - The selected images are divided into page groups
  - On each page, the algorithm arranges the appropriate image group into several rows.
  - Once a page has been generated, the image set of the page, the positions and the sizes of the images on the page are fixed.
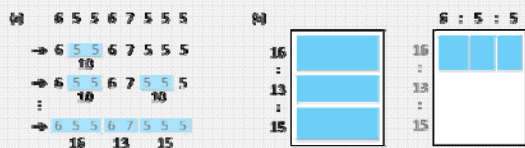

(a) The iteration that groups eight images into 3 rows. The numbers are the significant scores of the images.
(b) The placement and the sizes of these images on a page.

Figure 1

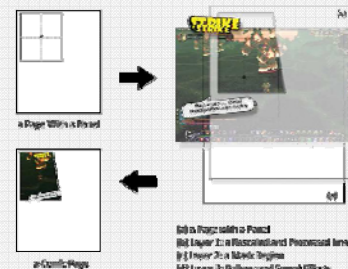- The image's shape and size on a comic page are determined based on its importance.

CASE STUDY: WORLD OF WARCRAFT

In the prototype, we chose World of Warcraft (WoW), an MMORPG, as the testing platform for our system. Fig. 3 shows a sample comic page.

- WoW is the most prevalent MMORPG worldwide.
- The WoW Players tend to share and preserve their gaming experiences with each other in both real life and virtual communities.
- WoW provides a sophisticated game log scheme.
  We created a WoW Addon to record the game session without modifying the game's core engine.

Figure 3

⚓ Rendering

- Three-layer scheme (see Fig. 2)

  - The image
  - The mask of the image
  - The word balloons and sound effects

Figure 2

USER SURVEY

The main window of the automatic comic generation system. In this interface, the log file is optional. If a user does not have a log file, the system will randomly assign a significance score for each image and render comic pages without text.
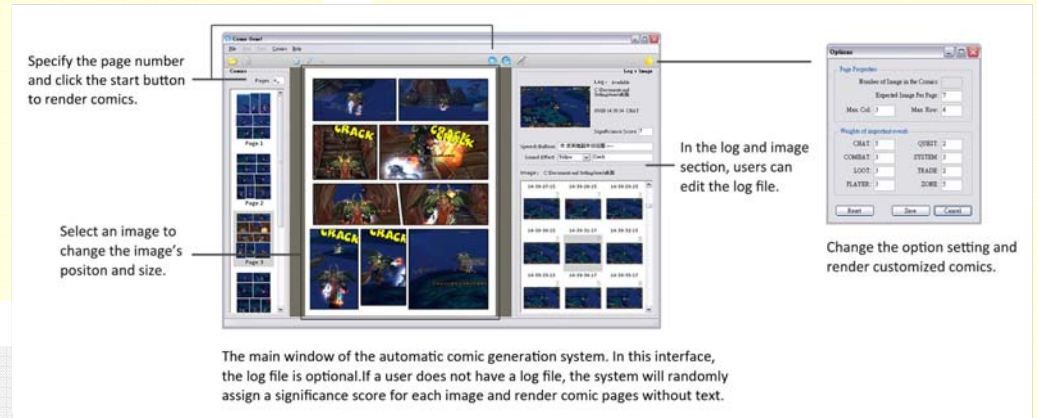
Figure 4

⚓ Some feedback from players:

- All players think the gadget is appealing and user-friendly.
- One user suggests: *"I think the frame selection mechanism still has room for improvement. Although the automatic idea is cool, I wish I can contribute more in the comic creating process"*
- *"It would be better if the interface has more setting and editing flexibility. I hope I can cut and resize some scenes."* said another.

⚓ The design of our system and the interface is then refined based on the user feedback. (see Fig. 4)

FUTURE WORKS

⚓ Applying a better object detection technique

- To pinpoint the location and size of game characters in screenshots
- To crop the comic book frames and put word balloons on frames accurately

⚓ To improve the layout computation algorithm to make the generated comics more similar to hand-drawn publications.

⚓ We are refining the interface design and adding new features to meet users' needs. We plan to release our system for public use in the near future