My Presenting Avatar

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Abstract. We have developed an application that offers to users the possibility to transmit documents via a virtual agent.

Keywords: Virtual agent, linguistic extraction, nonverbal behavior, animation.

1 Introduction

We have developed an application that offers to users the possibility to transmit documents via a virtual agent. The idea is to use avatars to present document so as to increase its diffusion and ease discussion.

The application makes use of a system that combines semantic analysis, nonverbal behavior generation and 3D animation. The system follows a sequential process. First, it extracts from any given documents the pertinent linguistic information; then it computes the multimodal behaviors the agent should use to communicate it; and finally it plays the animation on a web window. An interactive interface has been developed to allow users to go and modify the generated output. This modification can happen either at the linguistic level (refine the extracted information), the communicative and emotional functions level, or even at the animation level. This approach allows for a personalized and expressive communication schema. In this paper we describe the main components of the system.

Demonstration setup: The system works as follow (see Figure 1): at first the user selects a document to be transmitted by the avatar. To communicate the document expressively the avatar needs to know which of its information to highlight. To this aim, a semantic analysis based on crawling technique determines the structure of the document as well as new, pertinent or even contrasting information [1]. It is based on a predefined template written in the format APML-MPA, a variant of the format APML Affective Presentation Markup Language [2], which has been defined for the MyPresentingAvatar project. The template contains variable parts that are instantiated

A. Camurri, C. Costa, and G. Volpe (Eds.): INTETAIN 2011, LNICST 78, pp. 240–242, 2012.

when a given document is inputted to the system. The analysis step outputs tags value indicating newness, pertinence, contrasting and emotional information. These values are used to compute the animation of the avatar. Once the templates have been instantiated, they are converted in FML-APML format [3]. This file is then sent to the Greta Behavior Engine to compute the sequence of nonverbal behaviors to convey the communicative intentions and emotions described in the input file. It outputs a temporally order sequence of behaviors described with the BML Behavior Markup Language [4]. Finally with the Cantoche module, these BML tags are converted in animation file in the Living Actor format. The output of this last step is used to generate the presentation video. Through an intuitive interface, users can modify the resulting videos. Modifications can happen at 2 levels: high level, ie at the FML-APML level where users can change the value of a communicative function, and at the low level, ie at the BML one, where users can vary the choice of behaviors and its temporal alignment. After any changes made, the application renders a new video.

Technical description and requirements: The application works on a web browser. Internet connection is necessary to access all the modules.

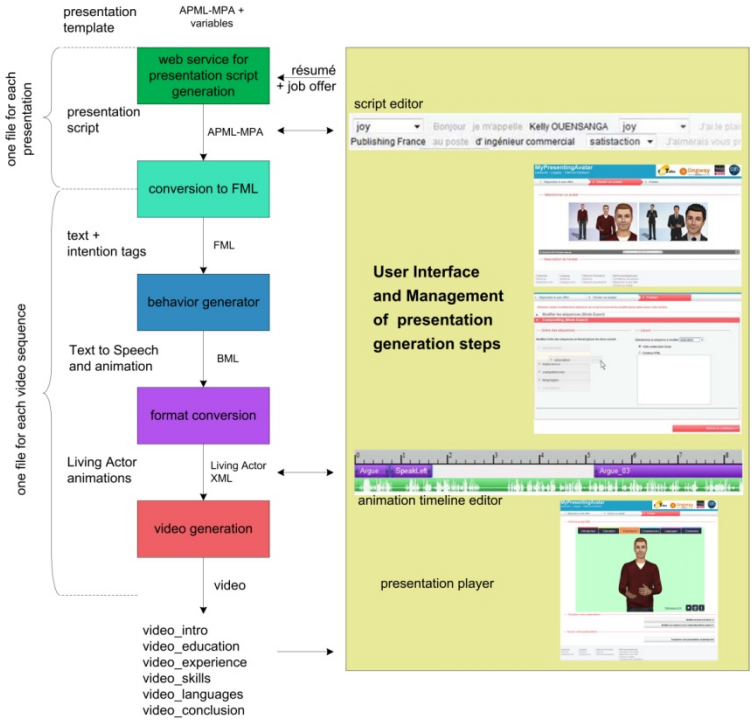

Fig. 1. Overall architecture of MyPresentingAvatar application

Acknowledgments. This research is supported by the ANR Web2.0 MyPresentingAvatar project.

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