

Affective and Persuasive Guide

Mei Yii Lim, Ruth Aylett, and Christian Martyn Jones

School of Mathematical and Computer Sciences,
Heriot Watt University,
Edinburgh, EH14 4AS, Scotland
{myl, ruth, cmj}@macs.hw.ac.uk

Abstract. The Affective Guide System is a context-aware system, including an ‘intelligent emotional guide with attitude’, offering the user with a multi-modal interaction interface. This research moves away from the concept of a guide that has it reciting facts about places or events to that of an ‘intelligent emotional guide with attitude’.

1 Introduction

Recently, many research projects have explored the new possibilities of location-aware systems to provide guidance to users in their everyday activities. Cyberguide [1] and MARS [5] are examples of existing mobile context-aware applications. However, none of these systems employ a life-like animated character. C-MAP [9] and Geist [2], on the other hand, attempts to use life-like characters as personal guides in virtual tours. [6] proposed storytelling from a virtual guide perspective. All these systems share a common goal, that is to provide user with context-aware information. However, an Affective Model and Affective Interaction are missing! Therefore, Affective Guide System (AGS) will be a tourist guidance system, with a new feature - the ‘intelligent emotional guide with attitude’!

2 The System

The AGS is proposed to address the frustration that usually occurs in interaction with an emotionless computerised system. It consists of two emotional virtual agents each possessing a contrasting personality, presenting users with different versions of stories of the same event or place. By telling story based on its past experiences and its own ideology, the guide tries to invoke empathy in the user, persuading them to think in the way it thinks. This will allow them to enquire, reflect, evaluate and use the sources of information critically to arrive at a conclusion, a learning strategy targeted by the UK National Curriculum for History [8].

A multi-sensory system will be integrated with the PDA, using wireless communication. The virtual tour guide will first extract some information from the user and plan a route based on this information. The tour guide will draw the

user's attention to landmarks, describing them in accordance with the user's interest, applying a story telling technique which links the memory and interests of the guide as well as the visitor to the spatial location. The user will interact through the graphical user interface and receive a response by means of text, graphics or audio. The system will principally consist of a server that performs the processing and provides location-related information, the guide memories - both emotional and semantic, and the user profiles.

3 Emotion Models

The main emphasis of this research is the development of an emotion model that expresses personality. The 'Psi' model [4] serves as the basis for its design. Functionally, the agent will perceive the environment continuously and generate intentions based on the acquired information and user needs. These intentions together with some built-in motivators - level of competence and level of uncertainty are stored in a memory of intentions. Next, the agent selects an intention considering the current situation and adapting its behavior to its internal states and the environmental circumstances. Each execution of intention will produce a feedback into the system and recovery will be performed when necessary.

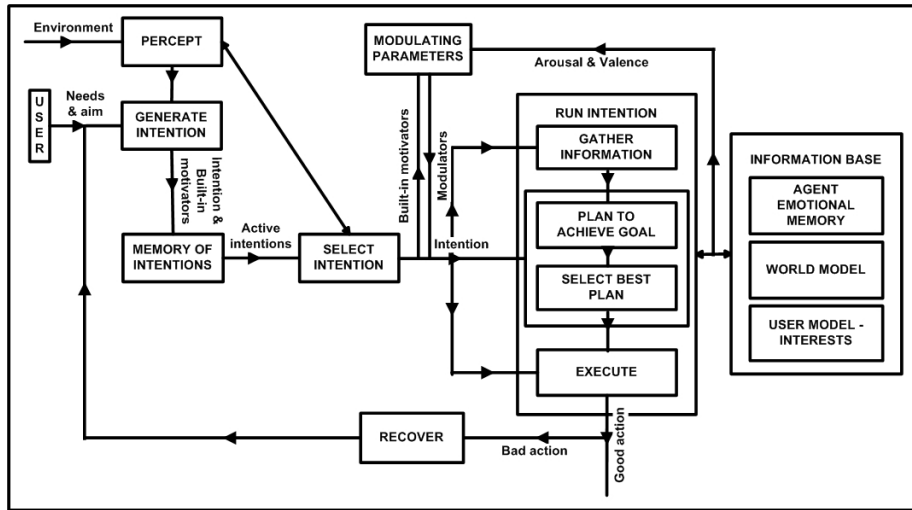


Fig. 1. The Emergent Affective and Personality Model

The idea of emerging emotions resulting from modulation of behavior is expected to give more colors and variation to the agent's expressions. The guide's emotional memory is a simulation of its past experiences and holds the 'valence' and 'arousal' tags, the two elements that usually exist in emotional events. When

interacting with the user, the guide will be engaged in meaningful reconstruction of its own past [3], at the same time presenting facts about the site of attraction. This recollective experience is related to the evocation of previously experienced emotions through the activation of the emotion tags. It results in re-experiencing of emotions, though there might be a slight variation due to the input from the user.

User's responses form positive and negative stimuli to the agent that gives hints about his/her interest. In terms of storytelling, this will mean that when the user adopts the guide's perspective by agreeing, the agent's level of competence increases which leads to a more detailed explanation about the subject or related subjects. Similarly, when the user disagrees, the agent's level of competences decreases and the agent tends to focus on only the important points of the subject without much elaboration. That is, the emotion elicited determines the information retrieved and how it is retrieved.

Besides emerging emotions, personality also emerges and the resulting personality affects the way the guide behave and story presentation. For more information, please refer to [7].

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