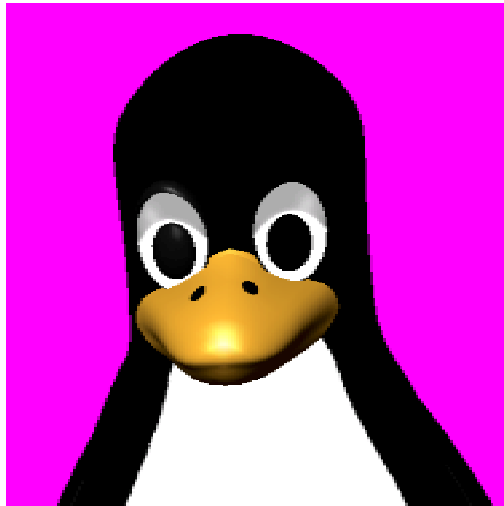


## Adaptive Personality of an Embodied Conversational Agent

The Linux Desktop Advisor, which is an example of an Embodied Conversational Agent, is a penguin which can provide help for the novice or even the experienced Linux user. The Linux Tux model (Heesch 1999) can be used as an MPEG-4 (ISO/IEC 1998) Talking Head, with the Mentor (Marriott 2002) system providing the interactivity, and knowledge about configuring the Linux system. The system can also pro-actively monitor system resources and provide expertise on how to manage the resources.



The development of a Linux Desktop Advisor includes many areas such as the MPEG-4 ISO standard (Pockaj 1999), Talking Heads or Embodied Conversational Agents (ECA) (Pelachaud & Prevost 1995), 3D facial animation and Mentor system.

This research will focus on the personality (Ruttkey et al. 2003; Ruttkey, Moppes & Noot 2003; Noot & Ruttkey 2003; Pelachaud, Ruttkey & Marriott 16 July 2003; Piwek et al. 2002) of the penguin or similar ECA such as detailed by Beard (2004; Beard & Reid 2002). Aiken (1989) viewed personality as “*an organized composite of qualities or characteristic – the sum total of the physical, mental, emotional, and social qualities of a person*”. The personality (Ortony, Clore & Collins 1988; Bartneck 2002) of the ECA will be modeled like a human and the ECA can express its emotion (Ekman 1984; Bates 1994; Reilly & Bates May 1992; Reilly May 1996; Wierzbicka 1992) automatically when communicating with the user. That is, the ECA will not always look friendly as Microsoft Office Assistant (Microsoft 2005). For example, the ECA will feel angry if a user always

asks the same question and therefore the answer and facial animation may be different from before. In the last several years, researchers have shown increasing interest in this area (Shepherdson 2000; Gulland 2001; Dam & Souza 2002; Pelachaud, Ruttkay & Marriott 2003; Rist et al. 2002; Gong 2002; AISB 2005; Stronks, Nijholt & der 2002).

The research will design, implement and evaluate an adaptive personality model for an Embodied Conversational Agent. This research will be done in a number of stages:

1. Investigate previous research and theories of personality models, and their specification.
2. Select an existing or design a new specification for an adaptive personality model.
3. Convert the specification into a suitable computer model.
4. Implement the model on an MPEG-4 facial animation system.
5. Evaluate the model in terms of user identification of the modeled personality and the effectiveness of the human computer interaction.
6. Disseminate research findings.

An adaptive personality model means that the effect of the environment, including the user, will alter the characteristics of the ECA's short and long term responses.

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