A virtual actor with socially emotional behavior

Alexei Samsonovich
National Research Nuclear University MEPhI, Moscow, Russian Federation

Vladimir Tsarkov
National Research Nuclear University MEPhI, Moscow, Russian Federation

Vladislav Yenikeyev
National Research Nuclear University MEPhI, Moscow, Russian Federation

Abstract

The framework of emotional Biologically Inspired Cognitive Architecture (eBICA) is used to define a cognitive model, producing believable socially emotional behavior in social interaction paradigms in a virtual environment. The paradigm selected for this study is a virtual pet (a penguin) interacting with a human user. Its implementation in Unity on a desktop PC in two versions, with and without an Oculus VR headset, was used in experiments involving 20 college student participants. Several versions of the model were compared. Results support the validity of the eBICA framework and indicate that the combination of somatic factors, cognitive appraisals and moral schemas in one model has the potential to make behavior of a virtual actor believable and socially attractive. At the same time, partial randomization of behavior does not affect the general result. The work has implications for the design of future emotionally intelligent collaborative robots and virtual assistants.