

Extraction of Affective Components from Chat Conversations and Their Use in Natural Language Dialogue Systems

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We are carrying out a research in the field of Human Computer Interaction and developing a natural language dialogue system in Hungarian. During the design and implementation of our chatterbot system we faced the importance of detecting the emotional load of incoming user messages and reacting on them appropriately.

In the beginning chapters we briefly describe the architecture of our dialogue system, BotCom with examples of its semantic processing capabilities. We give examples of how the system is handling the topics of the discussion, how the dialogue history is being used in order to enhance the reply generation.

In the subsequent parts we give an overview of the emotional state detecting, processing and generating module, called GALA, which is founded on the grounds of Robert Plutchik's emotional model. We describe the different layers of GALA, how Plutchik's 24 basic emotions are being used and how we extended the model in order to be able to create permanent, though dynamically changing emotional states. We show how BotCom is utilizing the detected emotional loads of the user's messages, therefore enabling the chatterbot to give relevant answers both semantically and affectively.

In the final chapter we explain how the database of GALA was filled up with expressions assigned to their emotional loads. We also describe a graphical user interface (GUI) being designed to model the changing emotional loads in dialogues, songs and poems. The GUI is being used for the emotional labeling of the phrases needed for the expression database of GALA.