ABSTRACT

In research on human-agent interaction (HAI) it is important to perform affect analysis, or emotion recognition of user input for further implementation, such as adaptation of agent behavior to affective states of the user. Several affect analysis systems have been proposed till now. However, none of them has been released yet as open source software. We present the first open source affect analysis system, ML-Ask, and some of its extensions. The system has been developed for several years and has matured enough to be released to the public. The system can be used for basic affect analysis in HAI research for Japanese, as well as an experimental baseline for specific research in affect analysis.

AFFECT ANALYSIS

Field focused on developing techniques (e.g. face recognition, speech analysis, natural language processing, etc.) for estimating the emotive aspect of input, such as emotion classes expressed by users (joy, anger, fear, etc.).

Useful in HCI for specifying:
1. user engagement in conversation (e.g., with a dialog agent [1])
2. user attitude (e.g., toward a specific object, or the agent itself [2])
3. user emotions (e.g., to choose different conversation strategy if the user is sad or happy, etc. [4])

OPEN SOURCE SOFTWARE

Computer software (a system, a program, a script, a library, etc.), which has been released by the creator of the software (copyright holder) as freely available to the public and licensed with a specific open source license.

Advantages
1. Contributes to the development of software in general
2. Saves money [13]

Examples

EVALUATIONS

SEPARATE SENTENCES | ONLINE FORUM

80 sentences (40 emotive, 40 non-emotive)

- Emotive / non-emotive
- 90% of agreements (72 / 80)

- Emotion types
- Emotion expressions extracted from 9-40 emotive sentences (Recall = 0.255)
- All extracted positively (Precision = 1.00)
- Balanced F-score = 0.367

ML-Ask on YACIS (Ameba corpus)

- Emotion type annotation tendencies (Ameba corpus)
- Similar: 8/10 types (joy, anger, gloom, shame/shyness, fondness, relief and surprise)
- Problematic: 2/10 types (dislike, excitement)
- Except of these two emotion types: 90% of agreements with human annotators with a good strength of agreement coefficient (Kappa = 0.681)
- Results were very statistically significant (P value = 0.005).

http://arakilab.media.eng.hokudai.ac.jp/~ptaszynski/repository/mlask

REFERENCES