BACHELOR/MASTER THESIS:

Quality of Spoken and Written Chat

DESCRIPTION
Chatbots have gained widespread usage – from interactive problem solving in service portals, to telephone banking and booking scenarios. Whereas traditional chatbots aim at a task-oriented problem solving, spoken chatbots aim at increasingly natural communicative skills, including showing emotions and personality.

The quality which is experienced by user of these chatbots has been addressed in some research. For spoken chatbots (so-called spoken dialog systems), dialogues are usually transcribed and annotated on different levels to quantify the flow of the interaction. Quantitative metrics are calculated from the transcriptions and annotations which allow perceived quality to be estimated; the estimations should show a high correlation to direct subjective measurements of quality which can be obtained e.g. following the Recommendation P.851 from the International Telecommunication Union. The PARADISE model (Walker et al., 1997) is an example of such a parametric estimation. In turn, the quality of written chat has only rarely been an object of research.

It is the aim of the present thesis to carry out a subjective experiment in which spoken and written chat are compared to each other in terms of overall quality and diagnostic quality features. The experiment will include human test participants which have to interact with a task-oriented chatbot that can be operated either through text or through natural speech. At the end of each conversation, the test participants rate the perceived quality on a standardized questionnaire. The conversations will be transcribed and annotated, in order to analyse the differences between spoken and written interactions with respect to perceived quality. Mathematical models will be built to describe the observed differences.

The experiments which are carried out in the thesis will be in German, so German communication skills with test participants are required.

REQUIREMENTS

- Experience with speech signal processing (e.g. via the course Speech Communication)
- Knowledge in speech quality and subjective testing (e.g. via the course Usability Engineering) is a plus
- Experience in chatbot development and/or Node.js webservices is a plus
- Great interest in the topic, as well as good organizational skills

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(Deadline: 30.03.2020)