

Master Thesis

Improving Immersion in Symptom-Checker Chatbot Studies through Sensory Symptom Simulation

Background

User studies with medical symptom-checking chatbots often rely on hypothetical scenarios. Participants are asked to imagine that they have a symptom and then interact with a chatbot. While this approach allows experimental control, it limits ecological validity: Participants are not actually experiencing the symptom, uncertainty, discomfort, or urgency of a real health situation.



Image generated by ChatGPT, GPT 5.5

Objective

The goal of this thesis is to design and evaluate an immersion-enhancing scenario induction method for healthcare chatbot studies. The thesis will compare traditional text-based scenarios with one or more sensory or multimodal simulation methods.

Possible Research Questions

- Which scenario induction method leads to higher perceived immersion in a symptom-checker chatbot study?
- Does sensory symptom simulation increase perceived realism?
- Does increased immersion influence chatbot evaluation outcomes such as trust, perceived usefulness, acceptance, or intention to follow advice?

Methodological Approach

The thesis may include:

- literature review on immersion, symptom simulation, and ecological validity;
- design of different scenario induction conditions;
- empirical user study comparing the conditions;
- quantitative measurement of immersion, realism, trust etc.

Expected Outcome

The thesis should result in:

- a structured overview of immersion methods for medical chatbot studies;
- a reusable scenario-induction protocol;
- empirical evidence on whether sensory symptom simulation improves immersion;
- recommendations for future symptom-checker user studies.

- Required skills:**
- interest in human–AI interaction, healthcare chatbots, and experimental research;
 - basic knowledge of study design and quantitative analysis;
 - ability to work with online survey tools or simple chatbot prototypes;
 - experience with physiological measurement equipments: eg. EEG
 - optional: experience with Python, JavaScript, LimeSurvey, or web-based prototyping.

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Start of the work: Immediately

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