Design Choices for Embodied Conversational Agents to Preserve Testimonies by Contemporary Witnesses

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Background

- Oral history: Conversations with contemporary witnesses as affective means of education [1]
- Virtual continuance after passing of contemporary witnesses
- Topical use case: Holocaust education [2]

Interactive Digital Testimonies (IDTs)

- Embodied Conversational Agents (ECAs)
- Natural Language Processing (NLP) of user questions
- ECA responses: Purpose-made recordings of contemporary witnesses
- Focus on authenticity and immersion
- Example implementation by LediZ [3]:
  - Audio-visual stereoscopic 3D recordings
  - Smart phone as audio input device

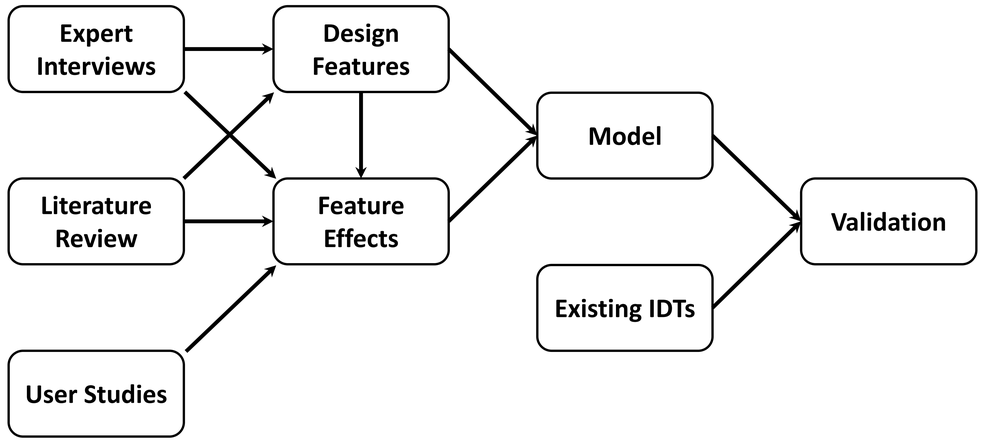
Figure 1: A user interacting with the IDT of Holocaust survivor Abba Naor.

Research Questions

How can interactive and immersive systems using multimodal displays, prerecorded responses, and NLP be designed to authentically replicate conversations with real humans?

- What are the design considerations and features for replicating conversations with real humans?
- What are the effects and interdependencies of these design features?
- What current IDT concepts exist and how can they be mapped onto the resulting model?

Research Approach



Preliminary Results

- Perceived presence conducive to learning [4]
- Audio-visual realism of responses causes false affordances of NLP
- Increasingly immersive display techniques lead to issues with accessibility
- Trade-off between portability and immersiveness
- Numerous opportunities for introduction of biases during IDT creation

Expected Contributions

- Overview of IDT design choices
- Model of relationships and interdependencies of IDT design choices
- Findings on lifelike ECAs and non-synthetic virtual humans

References

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