

TOWARDS DESIGNING AN ANTHROPOMORPHIC CONVERSATIONAL AGENT FOR ASSISTING JOB INTERVIEW PREPARATION

Extended Abstract

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Currently, conversational agents (CAs) attract strong interest in research and practice alike (Luger and Sellen 2016). While the idea of natural language interaction with computers dates back to the 1960s (Weizenbaum 1966), significantly enhanced capabilities through developments in machine learning and natural language processing have led to a renewed interest in recent years (Knijnenburg and Willemsen 2016). However, many CA could not fulfill the high user expectations and were often discontinued (Ben Mimoun et al. 2012). This gap between user expectations and system capabilities can be better understood by drawing on the Social Response Theory (Nass and Moon 2000). The human-like characteristics of CAs, such as the communication via natural language, being named, or sharing artificial thoughts and emotions, trigger social responses by the users. While these social responses offer interesting design opportunities, such as the design of persuasive CAs (Adler et al. 2016) or empathetic CAs (Hu et al. 2018), they can lead users to similar expectations of the systems as they have towards humans (Seeger et al. 2017), which are often not in line with the system's actual capabilities (Luger and Sellen 2016). In sum, successful design of CAs remains a practical challenge and an interesting phenomenon to study.

Different studies that address this challenge have recently emerged in IS research, providing prescriptive knowledge for the design of CAs with conceptual frameworks (e.g. Seeger et al. (2018)), initial design principles (e.g. Gnewuch et al. (2017)) or situated implementations (e.g. Vaccaro et al. (2018)). With our study, we contribute to this growing knowledge base in three ways: First, we present a novel artifact, that is an anthropomorphic CA in the context of recruiting. The artifact will be designed and evaluated over a span of around seven months in a DSR project in collaboration with an international professional services firm with over 2,500 employees. The project aims to offer a simulated job interview for interested candidates to prepare for the actual recruiting process. Second, we plan to summarize the prescriptive knowledge generated in the DSR project in a nascent design theory. Third, we pave the way for distancing from situated implementations to more general design knowledge for text-based CA in a professional context through contrasting our results with extant DSR studies on CA.

Our research project is based on the DSR framework suggested by Kuechler and Vaishnavi (2008). We conducted the project in three design cycles over a span of seven months. As of now, we are implementing the adapted design principles in the prototype. Afterwards, we plan the evaluation of the adapted artifact by means of an online experiment, which we describe in more detail in the final section of this article. The motivation for our DSR project stemmed from the idea to provide a new tool that supports the applicants in their interview preparation at the professional services company. As the job interviews

are for the most part standardized and case-study based, which is common for companies of that size, applicants can prepare themselves through practicing online case studies. These cases involve the structuring of a specific business problem, estimating and calculating numbers and presenting, as well as defending the solution. Existing online training systems typically consist of Q&A forms with a transparent structure and given answer options. While those systems can be helpful to understand the basic course of interviews, they lack realism due to their obvious structure and given answer options, which is not the case in the actual job interviews. Against this background, we considered a CA that simulates a more realistic job interview as a promising opportunity to improve the existing solutions in this application domain (Gregor and Hevner 2013).

We built the artifact and instantiated the design principles using Google Dialogflow and a custom-built web interface. Dialogflow provided the basic natural language processing capabilities to implement the CA, while the web interface was developed to provide convenient access for users, along with the website's integration of the professional service company. In order to simulate the interview as realistic as possible, we closely collaborated with the HR department to better understand a typical interview structure, employing existing material provided by recruiting experts of the company to design the conversation. To evaluate our artifact and demonstrate its usefulness in the field, we currently prepare an online experiment that compares the performance of the conversational agent to the performance of an extant online training system for job interview preparation. The professional services company will provide access to their talent pool which contains potential applicants. These job candidates will be asked to participate in an online experiment in which we randomly assign each participant to either the extant training system or the conversational agent (between-subjects design). At the moment, we estimate to have a sample size of around 100-120 participants from the talent pool. After completion of the training, participants will complete a survey. In the survey, we will use established measurement instruments to assess the perceived usefulness (Davis 1989), perceived enjoyment (Koufaris 2002), perceived human-likeness (Holtgraves and Han 2007), and social presence (Gefen and Straub 1997) as well as collect demographic information and prior experience with digital assistants and chatbots. After the collection of the survey data, we will test the hypotheses by means of t-tests for independent samples to understand whether the CA does indeed make an improvement on the state of existing training systems. After the evaluation of the artifact, we plan to summarize our contributions in the form of a nascent design theory (Gregor and Jones 2007) comprising the purpose and scope of the artefact (support applications in their job interview preparation), constructs (perceived usefulness, perceived enjoyment, perceived human-likeness, social presence), principles of form and function, artifact mutability, testable propositions, justificatory knowledge (Social Response theory, theory of Uncanny Valley), principles of implementation and expository instantiation.

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