Abstract

With the exponential surge in the use and popularity of Artificial Intelligence, Conversational Agents also known as Chatbots are becoming prevalent as they are being used across innumerable domains and applications.Today chatbots and virtual assistant systems like Siri, Alexa, Google Assistants are becoming an intrinsic part of human lives and becoming more human alike. However, with the adoption of conversational bots in various domains, developing highly efficient and engaging bots from scratch remains difficult and demands extensive supervision from human developers. This could be due to a variety of factors, such a scarcity of domain specific training data as collecting the data of sufficient quantity and quality can take a lot of time and cost, a lack of domain knowledge to efficiently respond to user queries/questions, or undefined scope of the agents.

This work proposes a system based on the Conversation-Driven Design concept for iteratively developing conversational agents (Chatbots). This essentially gives a conversational agent the ability to learn and adapt from actual user conversations. The proposed system's architecture modifies the traditional Wizard of Oz (WOz) technique in order to incrementally capture the domain-specific chatbot corpus while also improving the conversational agent's responses based on input from a domain expert user acting as a Wizard.

The experimental results and evaluation presented in this work corroborates the idea that the proposed system can be used efficiently to iteratively evolve conversational agents in closed domain applications to make them more engaging, intuitive, and human-like.