

Chatbot Performance Evaluation

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Abstract: *Intelligent conversational computer programs, commonly known as chatbots, have become a popular means of providing automated online assistance and guidance. Despite being computer programs, chatbots are designed to simulate human-like conversation and provide users with the impression that they are interacting with a human. This has made chatbots a widely adopted tool for virtual customer support across many businesses. Chatbots employ Artificial Intelligence, particularly Natural Language Processing and Machine Learning, to operate effectively. However, the use of chatbots is not without its challenges and limitations. The survey begins by reviewing the background of chatbots, including their history, definition, and applications. This is followed by an overview of Artificial Intelligence and its role in chatbot development. The paper then examines the challenges and limitations associated with chatbots, including their limited ability to understand complex user inquiries and the potential for chatbots to make errors. The survey also provides an analysis of current research trends in chatbot development, including approaches to Natural Language Processing, Machine Learning, and user interface design. The paper identifies key gaps in knowledge related to chatbot design, particularly in the areas of user interaction, context awareness, and response generation. The survey concludes by offering recommendations for future research in chatbot development. These include the need for research on chatbots' ability to understand complex user inquiries, the development of new algorithms for context awareness and response generation, and the exploration of new user interface designs for chatbots. Through this survey, we hope to provide valuable insights for researchers and practitioners in the field of chatbot development, and to stimulate new avenues of research in this exciting and rapidly evolving field.*

Keywords: Chatbots, Artificial Intelligence, Natural Language Processing, User Satisfaction, Performance Evaluation, Machine Learning

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