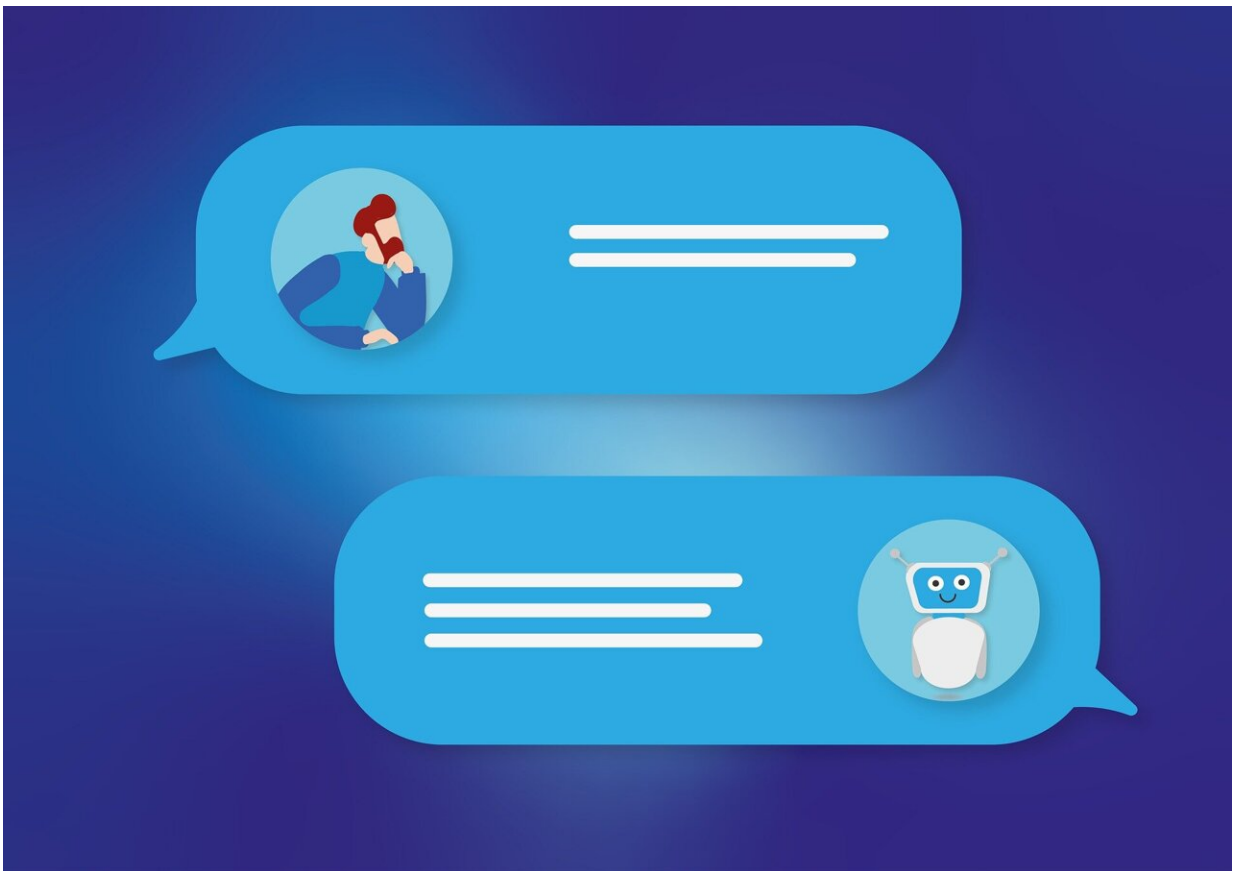# New research framework will help AI chatbots better mimic human conversation

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As artificial intelligence increasingly impacts our daily lives, researchers in the University at Buffalo School of Management have developed a

new framework to transform AI chatbots into more intuitive, human-like conversation partners.

Forthcoming in *AIS Transactions on Human-Computer Interaction*, the study introduces the Chatbot Discourse Design Framework, which helps find key conversation patterns in discussions between humans and connects them to chatbot designs to enhance their conversational abilities.

"Chatbots are everywhere, from customer service to health care, and their success hinges upon their ability to understand what you're saying and provide meaningful responses," says study co-author Raj Sharman, Ph.D., professor of management science and systems in the UB School of Management. "Our framework will allow all types of organizations to improve their operations and overall customer experience."

To build their framework, the researchers conducted a comprehensive search of publications spanning more than two decades, from 2000 to 2022. Their search yielded nearly 100 articles focused on the discourse analysis used in chatbot design, and also included papers from before 2000 that offered foundational insights.

Through this investigation, they identified three distinct chatbot types: informative, task-based and conversational, each requiring tailored conversation strategies.

"The recent failure of some well-known chatbots shows how important it is for a chatbot to understand the kind of conversation you want to have with it," says Sharman. "By building chatbots that recognize different types of discussions, businesses can make them more efficient, engaging and trustworthy for users."

Sharman collaborated on the study with UB School of Management

graduates Sagarika Suresh Thimmanayakanapalya, Ph.D. '20, senior quantitative researcher at JPMorganChase, who was lead author; and Pavankumar Mulgund, Ph.D. '20, assistant professor of management information systems at the University of Memphis Fogelman College of Business and Economics, who was second author.

Provided by University at Buffalo