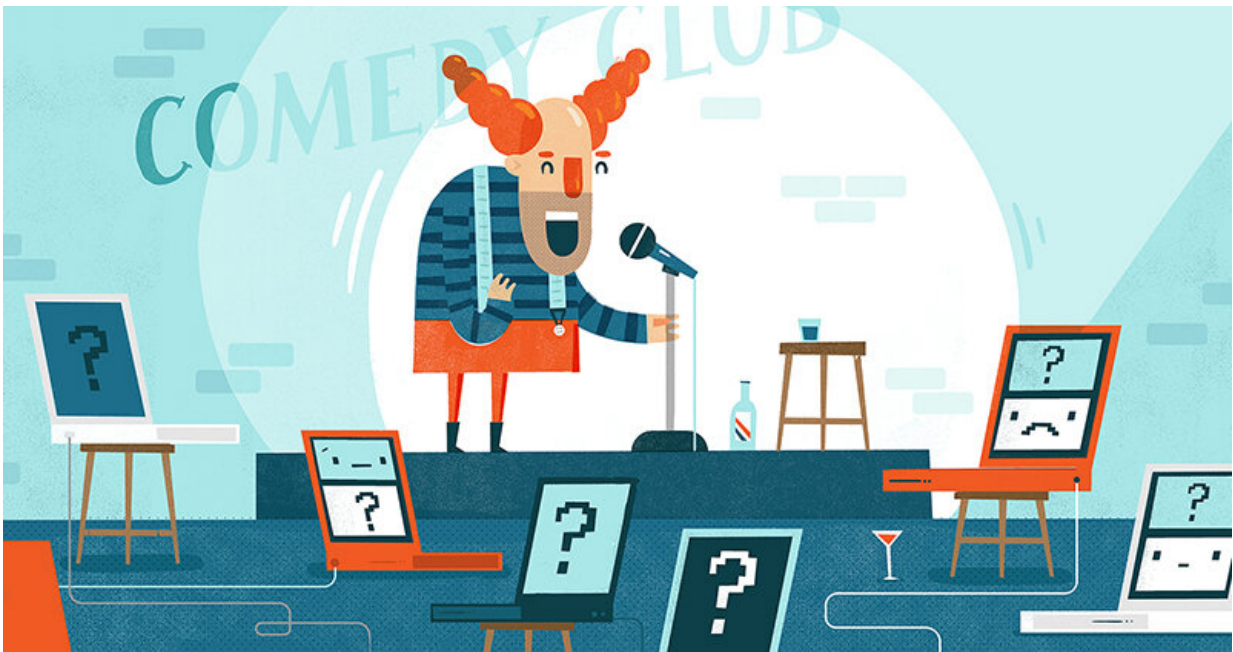


# Humor is both a hurdle and a gauge to improve AI, human interaction

February 26 2019, by Brian Huchel

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Credit: Shaw Nielsen

Ask any smart virtual assistant to tell you a joke and the response is, well, lackluster. A flat, robotic voice drones out some simplistic humor. No laughter, no tone and no concern if you are even listening.

Today's technology has reached a level where interaction between humans and computers is vital in everyday life. Unfortunately, natural communication between both sides has lagged far behind many other

advances.

Julia Rayz is conducting [artificial intelligence research](#) involving [humor](#), among other areas, to determine what is necessary through computational algorithms to create computer-human interaction that rivals a common conversation between people.

"I don't try to teach computers to tell funny jokes; I want to use [artificial intelligence](#) to get computers to a point where they understand why we think something is funny or not," said Rayz, an associate professor in Purdue University's Department of Computer and Information Technology.

That goal, however, is easier said than done. Current artificial intelligence systems perform well at working "inside the box," finding the correct rules and relationships in decision-making when the logic involved is pretty black and white.

"But when there are no clear rules – and there are no clear rules in [human communication](#) – what are we going to tell the computer to do, find rules that don't exist?" Rayz said. "Whenever the box doesn't have clear outlines, it's turning into a royal mess. You can't find enough examples that are going to describe every possible communication scenario."

Advances allowing artificial intelligence to communicate in a natural way with humans can help people work better, increasing potential performance in the business world and allowing for human-computer collaborations that take on more complex challenges and devices.

Rayz' research involves trying to provide artificial intelligence with understandings of what makes a joke a joke, looking at facets such as delivery, context and emotion. To reach comprehension, the computer

also needs to have a lot of background knowledge about the situation that the joke describes.

Finally, the artificial intelligence must have a perfect understanding of every single meaning that is used in that joke and be able combine it together and interpret the meaning behind what is being said.

The work is second nature for people, but a huge hurdle for artificial intelligence to overcome.

The research isn't confined to computers, with linguistics, psychology, sociology and anthropology experts also taking on the task.

Rayz has humor comprehension projects ongoing as part of Purdue's Applied Knowledge Representation and Natural Language Understanding Lab, which she directs. But, she said, research doesn't have to focus on just humor in order to make progress toward humor processing.

However, the facets involved in humor make it a perfect litmus test for computer-human interaction. If the system can identify a joke, it can understand the nuances that accompany other text and conversation, such as sarcasm and irony.

"Artificial intelligence should be able to handle more natural conversation and understand when you are joking and when you are serious," she said. "If you are giving a command in a sarcastic manner, the [computer](#) needs to know it does not need to follow that command.

Not all of Rayz' research is in the lab. She truly appreciates a good [joke](#) and is always thinking about how she can make the transition to artificial [intelligence](#).

"You can just sit at a café with coffee and observe people and their reactions and modify your algorithms in your mind," she said. "There are some types of humor I hear and think, 'Really? You can do better than that.' But, in conversations especially, you hear a response or hear someone say something, you think 'Oh wow, that's complex. I need to incorporate that.'

Provided by Purdue University

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