

A Natural Language Interface to a Robot Assembly System Response

In the paper titled above, the main question the authors are trying to answer is how to construct a natural language interface to a robot system that can be taught by humans. The authors also include the criteria of the robot being able to understand varying human syntax and ask for clarification if the robot system is unsure of what to do.

One part of this paper that I enjoyed was listing 1 which contained the conversation of a user trying to teach the robot system to accomplish various tasks. As I read through the conversation, I realized the potential usefulness of having a natural language interface, and I thought that I could probably teach a similar system to do my job of opening and sorting utility bills. As discussed in the conclusion however, this particular system example still needs improvements and that isn't considering the costs of creating such a system. I also appreciated the way the article discussed what a real-world equivalent system would need in terms of vocabulary to be viable.

While reading, I was not able to find anything that I really disagreed with because the paper seemed more like it was presenting a potential option while being critical of that system's possible flaws or shortcomings.

Being able to direct a robot system to carry out complex tasks using language seems like the next natural progression in programming languages. With new software such as Codex, which is an artificial intelligence that is able to write code to an extent, it looks as if the goal of programming is eventually to not have to program that much at all. This is not to say that computer scientist would go away, but the focus would probably have to shift toward project architecture instead of more menial programming tasks.

Mobile Robot Programming using Natural Language Response

The question that this paper is trying to answer is included in the abstract, “How will naive users program domestic robots”? To answer this question the paper puts forth their design as a prospective solution to this problem.

I really enjoyed how this paper started off explain the benefits of using Instruction-Based Learning before getting into any details of how their system works. This gave me insight into why choosing Instruction-Based Learning would be positive in situations where other systems fall short. This also helped when the paper talked about the potential draw backs of using Instruction-Based Learning. I liked the discussion because having the user be a human is a serious draw back to the entire system because humans speaking a language can cause miscommunication or contain regional dialect distinctions which a robot system with a finite vocabulary might not be able to understand.

Overall, I though this paper was really well written, and I do not have any major problems with it.

I think this paper does a great job of portraying the pros and cons of Instruction-Based Learning, but I think there is an ethical dilemma in creating these types of systems that wasn't really addressed. Humans have unique voices because of preferred sentence structures, choice in diction, or regional slang. Will the robot system be built to clearly understand a middle-class person from New England and a poor person from the South? What about people with speech impediments, can systems be designed for their particular speech patterns? As Dialogue Managers become better, I'm sure human to robot speech interaction will become much easier

for all humans, but I think if we aren't discussing these types of limitations now it might not be addressed in the future.

The language of music: Common neural codes for structured sequences in music and natural language

This study explores the relationship between natural language and music, seeking to understand if the two forms of communication have any commonalities in their neural coding. They found that natural language and music share a basic neural code for structured relationships.

My biggest problem with this article is that it's hard to understand. I can comprehend that they found evidence supporting their hypothesis. It's understandable that music and natural language share coding similarities as they are both forms of human communication. However, I read the results and discussion sections several times, and found the nuances of the study very hard to understand. The writing felt word and drawn out. It was far from a clear and concise research report. Even the abstract, which should be simple enough for a layman, seemed a little convoluted. I did not feel like the paper was written with readability in mind.

One inspiration I had while reading this article was that robots should come to understand the artistry and meaning of musical lyrics as they learn about human language. Humans often speak metaphorically, or in poetic, non-literal terms. If a robot can understand these nuances of language, we can greatly expand the robot's ability to communicate and execute the commands of humans. A human mind's communication center is vast, and thus a robot's understanding of language must also be quite expansive in order to be fully effective.

