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1 Research Interests

My research interests lie in the area of **architecture of incremental spoken dialogue systems** (SDS), using **crowd-sourcing** to bootstrap SDS development and their **real world applications**.

1.1 Incremental spoken dialogue systems

Spoken dialogue systems are increasingly being used in applications. As the users get accustomed to such systems there is a need for building a more efficient and natural conversation system. Taking a leap from traditional non-incremental to incremental dialogue systems is not trivial. As the speech input from the users are continually evolving the systems need to update their understanding at a much faster rate and generate the responses naturally and as quickly as possible. In my research I am interested in exploring such architectures which make the dialogue systems more natural and hence more acceptable to users.

1.2 Crowd-sourcing to bootstrap SDS development

Crowd-sourcing provided plethora of opportunities to fast-track the process of SDS development. The popularity of crowd-sourcing for dialogue systems research has increased in recent times and has been quite extensively been used for collecting user interactions (manuvinakurike and DeVault 2015) (Zarrieß et.al 2015) and have been used successfully to build and deploy a spoken dialogue systems (Paetzel et.al 2015). Crowd-sourcing helps reduce time and cost for building and deploying a dialogue system compared to traditional in-lab methods (manuviankurike et.al 2015). Prototyping in quick time can help deploy and collect human-agent interaction data and further SDS development.

1.3 Real world applications

Support based systems, question answering and Personal assistants are the most widely used type of dialogue systems. However, as the SDS research progresses their potential in the field of education and medical interventions cannot be downplayed. Embodiment can play a major role and help develop effective interventions (manuvinakurike et.al 2014).

2 Future of Spoken Dialog Research

As SDS become a part of daily lives through personal assistants or automated tellers further avenues for their deployments will open up.

- Generates more interest in naturally conversing agents vs a voice based interfaces
- Generates more interest for better and domain independent language understand modules.

3 Suggestions for discussion

- Natural language understanding for reference resolution.
- Spoken dialogue system applications in industry.
- Incrementality in SDS research.
- Dialog and Question-Answering: Mutual benefits, user interaction.

References

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Biographical Sketch

Ramesh Manuvinakurike just finished his 3rd year of his Ph.D program at University of Southern California. He is beign advised by Prof. David DeVault at USC. He has previously worked with Prof. Timothy Bickmore developing Embodied conversational agents for health interventions. He has worked with Prof. David Schlangen working on language understanding for reference resolution. He is interning at Adobe Inc. developing spoken dialogue system for image search and photo editing.