

COHERENCE OF OFF-TOPIC RESPONSES FOR A VIRTUAL CHARACTER

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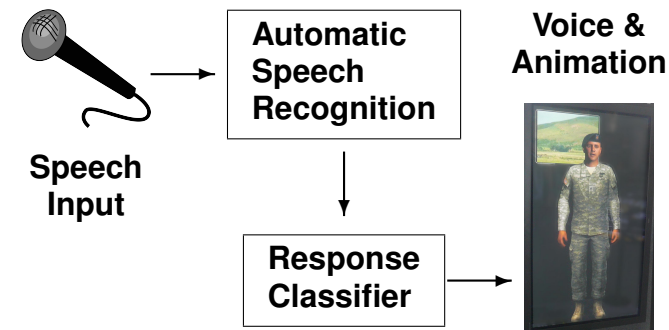
SGT STAR

A virtual question-answering character
 Developed for U.S. Army Recruiting Command
 Hi-tech attraction
 Information source about the Army
 Life-size character, built for demos in mobile exhibits

User: Why are you here?
SGT Star: I'm on special assignment from the U.S. Army Accessions Command out of Fort Knox, Kentucky.
User: Do you like animals?
SGT Star: Hooah! I love animals. Although I can't really have any since I'm virtual and all. But if I did have a dog I know exactly what I'd call him: Patriot!

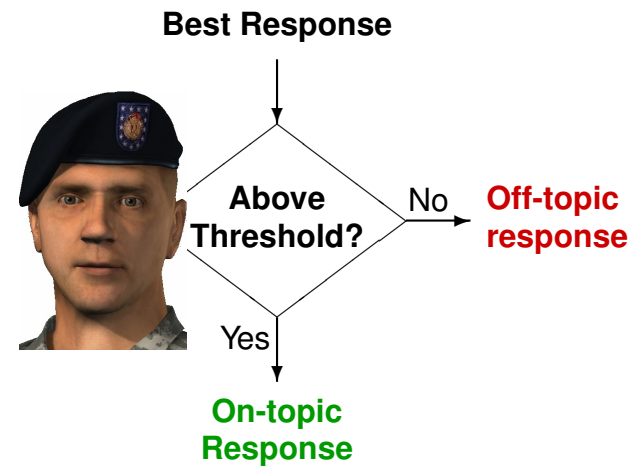
TECHNICAL DESCRIPTION

Input: unconstrained human speech
Output: pre-recorded voice and animation



CLASSIFIER

Statistical classifier ranks the available responses.
 Score of best response determines if it's good enough:



OFF-TOPIC POLICY

Three phases of off-topic responses:

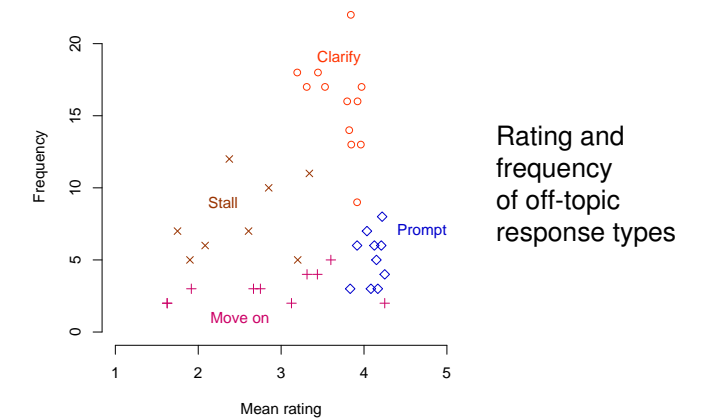
- Clarify:** Ask the user to repeat.
- Stall:** Wait for user initiative.
- Move on** and **Prompt:** Direct the user to a new topic.

User: How do you understand what i say? Rating
SGT Star: Sorry, I didn't catch that. Could you say it again? <3.75>
User: Tell us about your technology.
SGT Star: You're hooah. <1>
User: Tell me about your technology.
SGT Star: Can we talk about what I want to talk about? <3.5>
SGT Star: Ask me how I can see in the dark. <4.5>

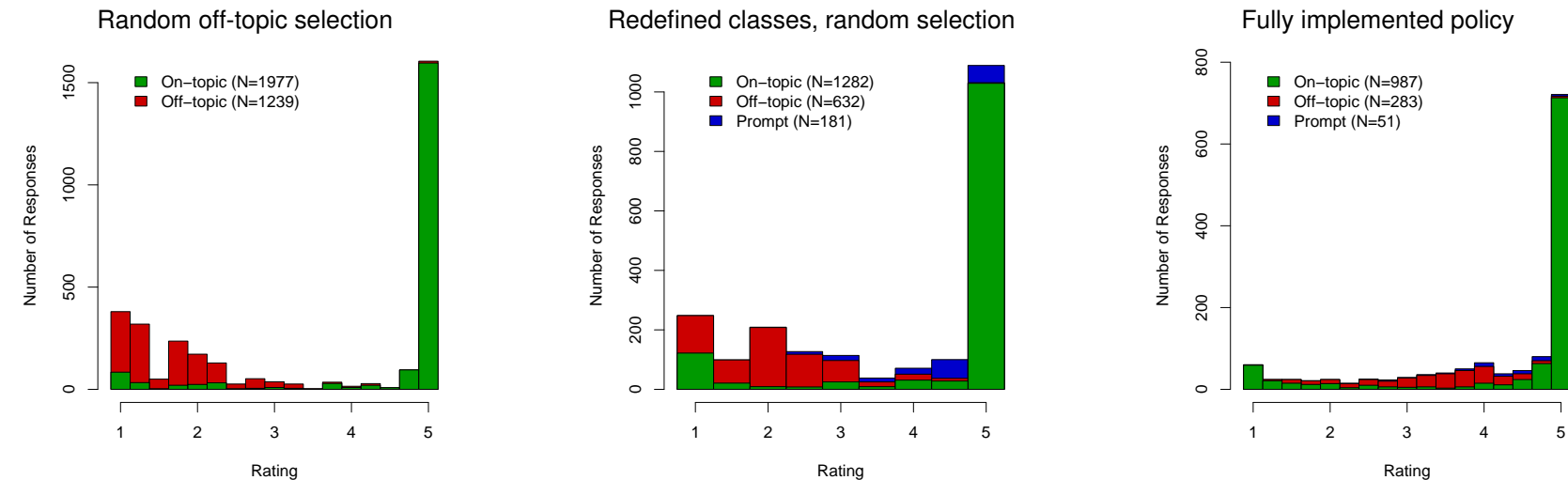
DISCUSSION

Off-topic handling is a rudimentary form of **dialogue management**: deciding what to say based on the state of the dialogue.

Initial off-topic responses are clarification requests.
 Keeps track of how long misunderstanding persists.



DIALOGUE COHERENCE individual responses rated in context on a scale of 1-5



The most frequent off-topics are **Clarify**:
 This is the most important factor in improving coherence.

Stall less frequent, unacceptable.
Move-on least frequent, variable acceptability.
Prompts are acceptable.

SGT Star is loosely based on a character created by Next IT for the Army's recruiting web site, <http://www.GoArmy.com/>. SGT Star's body and animations were developed by the Mixed Reality team at ICT: Diane Piepol, Kip Haynes, Matt Liewer, Josh Williams, and Tae Yoon. The project or effort described here has been sponsored by the U.S. Army Research, Development, and Engineering Command (RDECOM). Statements and opinions expressed do not necessarily reflect the position or the policy of the United States Government, and no official endorsement should be inferred.