LEARNING FROM DIALOGUE AFTER DEPLOYMENT: FEED YOURSELF, CHATBOT!,

BY BRADEN HANCOCK, ANTOINE BORDES, PIERRE-EMMANUEL MAZARE, JASON WESTON

Facebook AI Research team introduced another chatbot that learns from humans when chatting with them. The idea to ask for user feedback when the model has low confidence in its response is not new and dates back to 90s, but this research introduces several interesting ideas. First of all, the authors show that assessing the speaking partner's satisfaction works a lot better than using model confidence. Next, the user's feedback responses in the suggested setting don't need to be specially formatted. And finally, the experiments show that the models benefit from using both dialogue and feedback deployment examples, even though they are coming from the same conversations.

CORE IDEA OF THIS PAPER

Designing the self-feeding chatbot that can extract new training examples from the conversations it participates in during deployment:

1. a dialogue agent imitates human responses when the human is satisfied,
2. and it asks for feedback when the speaking partner is not satisfied (i.e., "Oops! Sorry. What should I have said instead?").

The dialogue agent in the suggested setting performs three tasks:

1. the primary DIALOGUE task – carrying on a coherent and engaging conversation;
2. the auxiliary FEEDBACK task – predicting the feedback that will be given by the speaking partner when the agent believes it has made a mistake and asks for help;
3. the auxiliary SATISFACTION task – predicting whether or not a speaking partner is satisfied with the quality of the current conversation.

During deployment, the dialogue agent collects DIALOGUE and FEEDBACK examples, and is then periodically re-trained using all available data.

KEY ACHIEVEMENT

- Introducing a new approach for dialogue agent to learn from interaction with users.
- Demonstrating that assessing user satisfaction works better than using model confidence.
- Releasing three new datasets:
  - deployment chat logs (512K messages);
  - ratings of user satisfaction (42K);

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