

# Jebediah – Arguing with a Social Bot

## Dialog-Based Discussions in Social Networks

Christian Meter, M.Sc., Department of Computer Science, HHU

### Jebediah - a Social Bot for Online Argumentation

Jebediah is a social bot based on Google's framework Dialogflow for *Artificial Intelligence* (AI) development. It connects Dialogflow with a *Dialog Game Execution Platform* (DGEP) such as D-BAS' backend. Dialogflow enables a seamless integration into many popular social networks, e.g. Facebook or Twitter, and provides processing of text-input from conversations. We leverage this to enable natural language access where the AI is used to parse and interpret the user's input, whereas the interpreted data is sent to D-BAS' DGEP, in order to calculate the next steps in the discussion.

D-BAS is our *Dialog-Based Argumentation System*, which has been presented before. It enables structured discussions and collects statements from a big number of participants. These statements are then put into an argumentation graph for further analysis. D-BAS then presents new users the statements from previous participants and aims to tease more statements from the users.

### Discussing with Users

- Integrated in Social Networks
- Discuss in natural language
- Collect user's opinion and let the user react to previously collected statements
- Follow D-BAS' discussion flow:  
present argument → gather feedback & arguments from user → select next argument → ...

The screenshot shows a chat interface with the following messages:

- User: I want to talk about improvements of computer science courses
- Jebediah (J): Sorry there is no such topic, but we can talk about Improve the Course of Computer-Science Studies
- User: Okay, sounds good
- Jebediah (J): Ok, let us talk about Improve the Course of Computer-Science Studies. Do you think lecture notes should be put online before the lecture so that students can prepare themselves?
- User: Yes, that's a good idea
- Jebediah (J): And why do you think that?
- User: If the students have the slides before or in the lecture, it is possible to take own notes directly into the slides
- Jebediah (J): Another user thinks that the lecture can be understood more easily. What do you think about this?
- User: Sounds reasonable

### D-BAS - A Dialog-Based Argumentation System



The main idea of D-BAS is to let users exchange proposals and arguments with each other in the form of a timeshifted dialog where arguments are presented and acted upon one-at-a-time. We highlight the key research challenges that needed to be addressed in order to realize such a system, provide solutions for those challenges, report on a full scale implementation of D-BAS and summarize the findings from a real world e-participation process, where D-BAS provided the infrastructure for online argumentation.

### Open Source

Discussion-related software should be made open source. Otherwise there is no possibility to verify its integrity.

Jebediah and all other projects from our working group, are open source and can be downloaded for free on GitHub:

<https://github.com/hhucn>

### Publications

C. Meter, B. Ebbinghaus and M. Mauve. "Jebediah - Arguing With a Social Bot"  
*Proceedings of the 2018 Conference on Computational Models of Argument*

T. Krauthoff, C. Meter, M. Baurmann, G. Betz and M. Mauve. "Dialog-Based Online Argumentation"  
*Proceedings of the 2018 Conference on Computational Models of Argument*