

Dialog-Based Online Argumentation

A Dialog-Based Argumentation System for Online Participation

by Tobias Krauthoff, M.Sc., Department of Computer Science, University of Duesseldorf

Motivation and Central Research Topic

State of the art for large scale online discussions:

- Forum? → Does not scale well for many participants!
- Pro-Contra List? → Only for one proposal!
- Argumentmaps? → Expert knowledge necessary!

- ⇒ Current approaches do not scale, are unstructured or too complex!
- ⇒ **Novel approach:** Simulation of dialog between participants, whereby the system recycles arguments that are given by users!
- ⇒ **A Dialog-Based Argumentation System for Online Participation**
- ⇒ **D-BAS**

Approach and Current Status

☆ We should introduce an admission restriction .
You are the first one with this decision.

What is your most important reason why we should introduce an admission restriction holds?
Because...

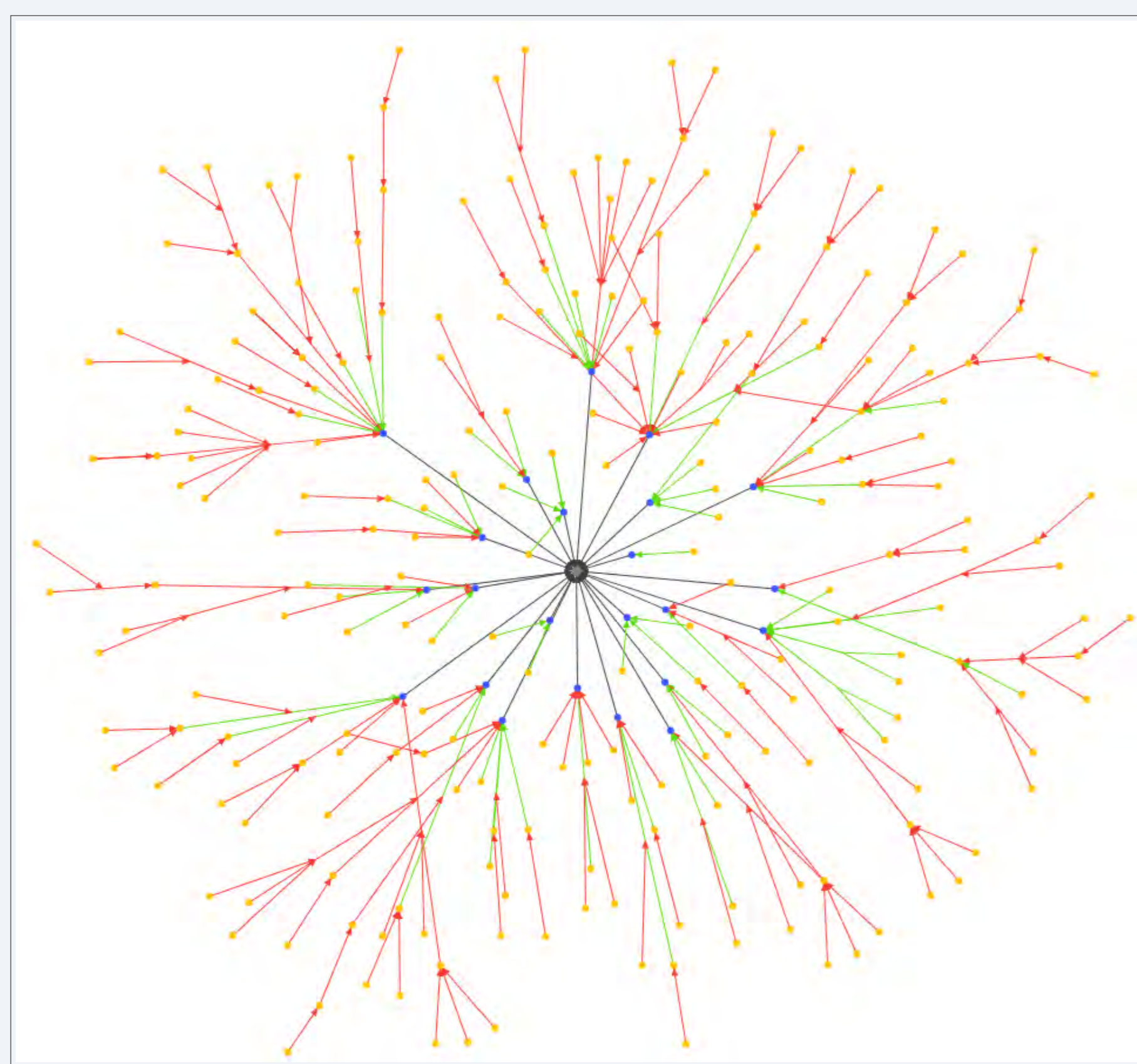
many students register themselves without having the necessary skills.
 by this, the courses are not used to filter out students.
 the demand for the course is too large, so that a restriction must be introduced.
 None of the above! Let me state my own reason!

☆ We should introduce an admission restriction because many students register themselves without having the necessary skills.
You are the first one with this decision.

Marius does not have any opinion for many students register themselves without having the necessary skills. But he claims to have a stronger statement for rejecting we should introduce an admission restriction . He says: *it only moves students, who enroll solely for the local traffic card, (if at all) to other admission-free subjects.*

What do you think about that?

In my opinion, his statement is wrong and I would like to argue against it.
 In my opinion, his statement is correct and it convinced me.
 In my opinion, his statement is correct, but it does not support his point of view.
 In my opinion, his statement is correct and it supports his point of view. However I want to defend point of view.
 Show me another argument.



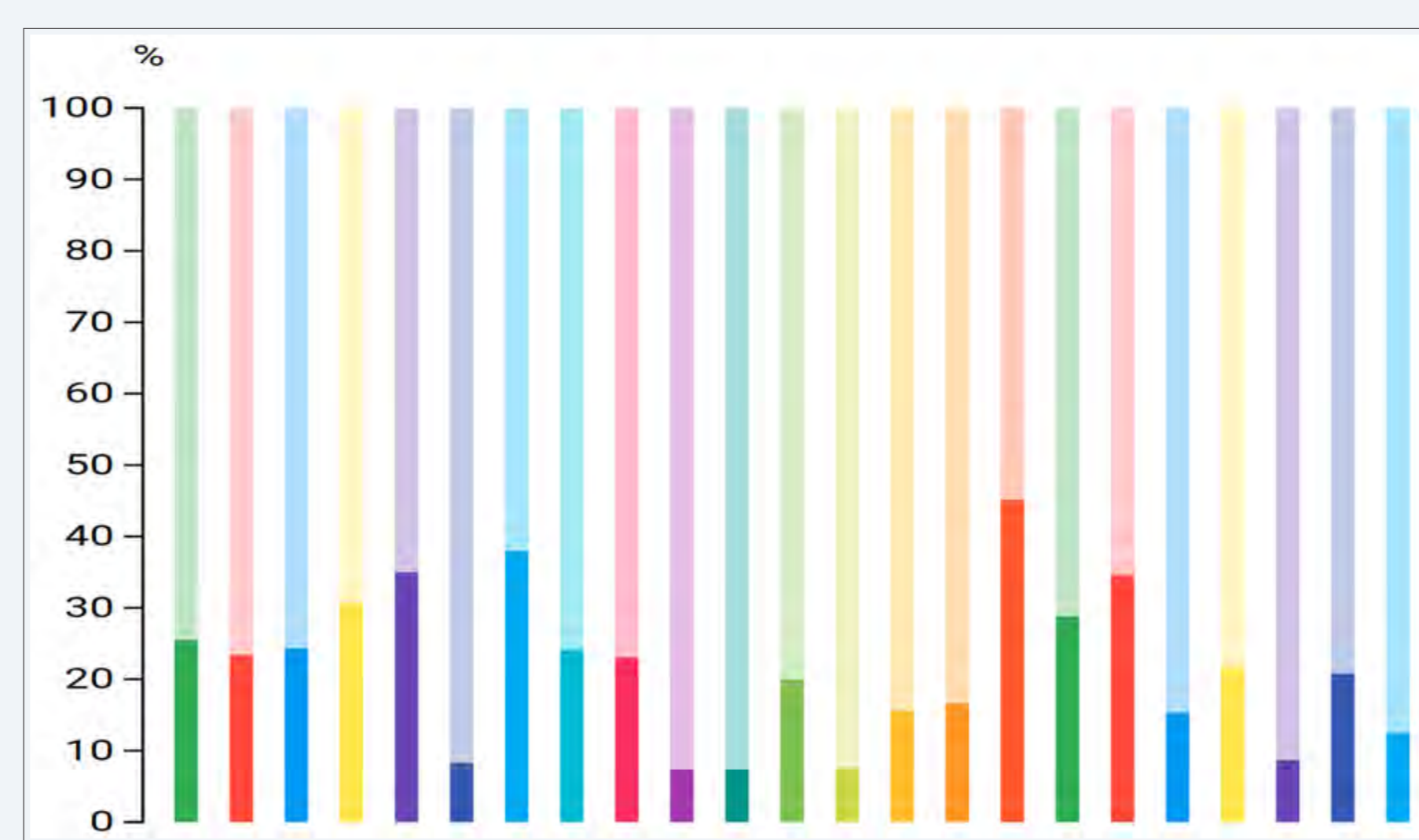
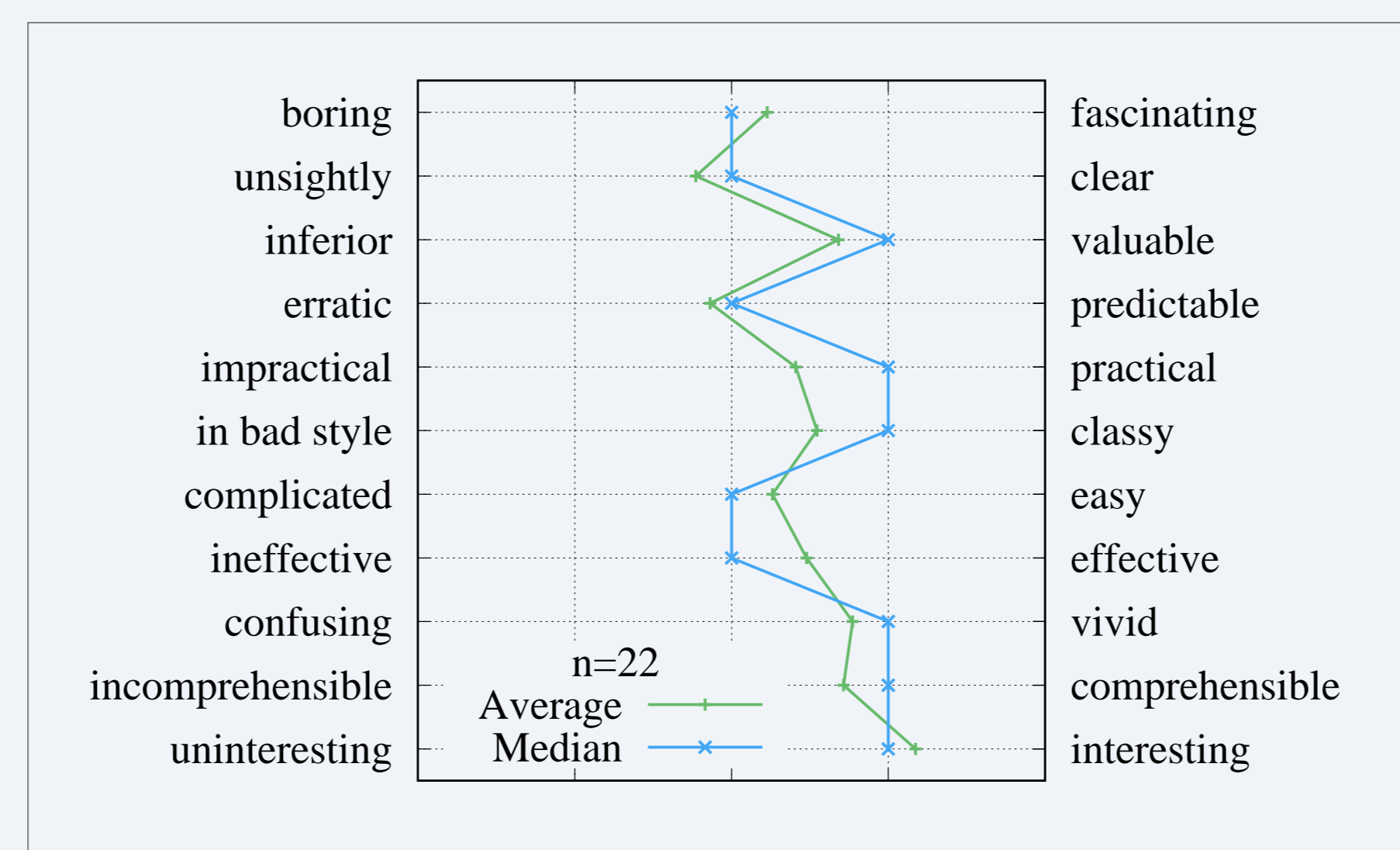
Idea: Simulation of a real world discussion!

- System is a representative of those users, who already participated
- System conducts a dialog with the user:
 1. Present a single argument
 2. Gathering feedback
 3. Next argument based on feedback

First Fieldexperiment: May 2017

- 318 distinct visitors / 47 registrations
- Map with 235 arguments
- Decentralized moderation system
- First real world argumentation map

Questionnaire:



Problem Statements:

- Clarity of contributions
- Untrained participants
- Scalability and polarization

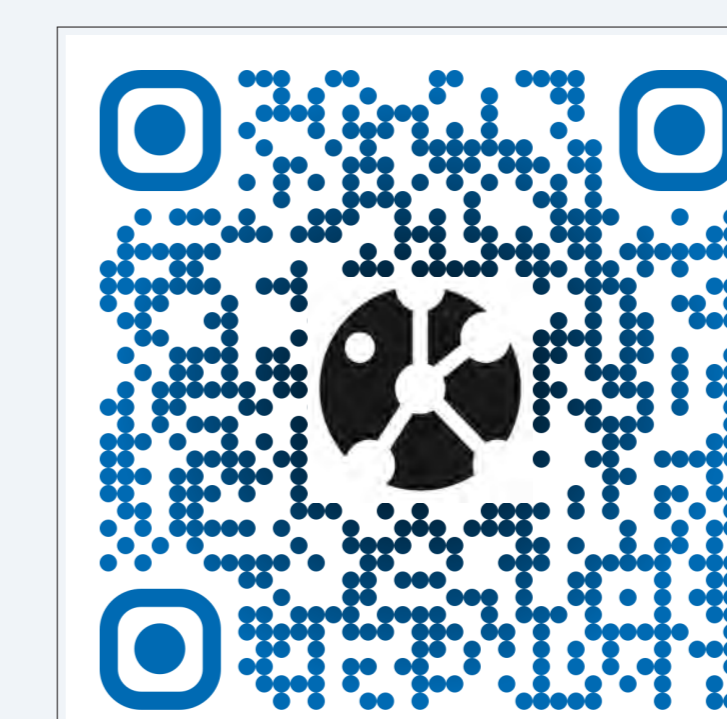
Further Questions: How to ...

- ... present the approach?
- ... get feedback?
- ... bootstrap an ongoing discussion?
- ... select the next argument?
- ... accept new statements?
- ... review data?
- ... recycle arguments as a resource?
- ... embed it into arbitrary websites?
- **But we solved everything!**

Selected Publications:

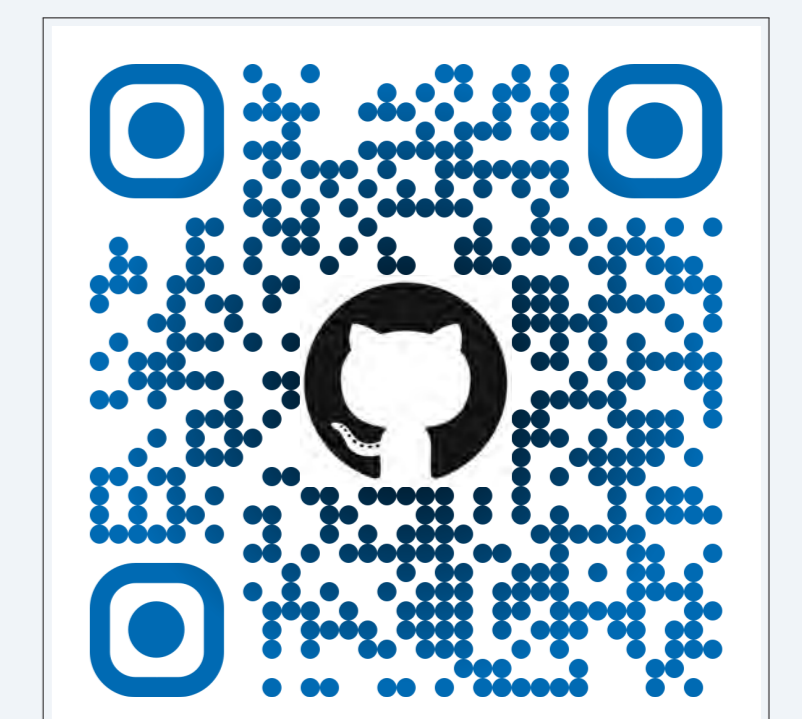
- Krauthoff, Meter, and Mauve, M. (2017): "Dialog-Based Online Argumentation: Findings from a Field Experiment". In Proceedings of the 1th Workshop on Advances in Argumentation in Artificial Intelligence.
- Krauthoff, Baurmann, Betz, and Mauve (2016): "Dialog-Based Online Argumentation". In Proceedings of the Conference on Computational Models of Argument.

Live-System



<https://dbas.cs.hhu.de>

Github



<https://github.com/hhucn/dbas>

Inter- und Transdisciplinarity

Theoretical Computer Science:

- Theory of argumentation and graphs

Practical Computer Science:

- Natural language processing

Social Science:

- Design and execution of laboratory and field experiments

Entire Colleagues:

- Feedback for D-BAS

Supervisor Team

- Jun.-Prof. Dr. Kálmán Graffi (Computer Science, HHU)
- Prof. Dr. Martin Mauve (Computer Science, HHU)

- Prof. Dr. Michael Baurmann (Social Science, HHU)
- Daniel Reichert (Liquid Democracy e.V.)