MARDY: Modeling ARgumentation DYnamics in Political Discourse

Overview

Bringing together expertise from Political Science, Computational Linguistics and Machine Learning, the project aims to develop a framework for data-driven modeling of key aspects of argumentation dynamics in policy debates as they unfold over a period of days or weeks. The project is funded by the DFG within the Priority Programme 1999 - Robust Argumentation Machines (RATIO)

Duration:
01 November 2017 - 31 October 2024

Research Team:
Prof. Dr. Sebastian Haunss (Head of project)
Prof. Dr. Jonas Kuhn, University of Stuttgart (Head of project)
Prof. Dr. Sebastian Padó, University of Stuttgart (Head of project)
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Funding:
Deutsche Forschungsgemeinschaft (DFG)
Volume: 1.300.000 €

Details

Reserach Questions and Results

The first phase of MARDY (1997-2021) has built on the assumption that in order to understand the dynamics of democratic decision making, methods and tools for analyzing policy debates are needed. We have developed an approach to automate and speed up processing of political debates in German, and applied it to the policy debates about migration and pension.
MARDY1 has harnessed the synergy of two mixed-methods approaches: Discourse Network Analysis, which combines elements from qualitative and quantitative text analysis with network analysis on the Political Science side and the hybrid Computational Linguistics/Digital Humanities methodology on the NLP side. Bringing together questions, methods, and concrete requirements from different fields has shaped our research program and triggered conceptual and technical progress in both NLP and Political Science.
MARDY1 has provided us with the know-how to carry out in-depth discourse network analysis of individual policy debates in German. Yet, many research questions require a comparative

perspective. MARDY2 will thus broadens the scope, by making the computational approach flexible cross-lingually and across domains. This generalization step will be accompanied by a more fine-grained representation of argumentative structures. MARDY2 will now develop new methods to explore the discourse network modeling of actor/claim/frame dynamics to the full scale in order to support a cross-lingual and cross-domain perspective.

Goals
For the second funding period we aim to expand the scope of MARDY's analytical framework. We expect to benefit from cross-talk between the adaptation and further development of state-of-the-art data-driven NLP models and a theoretically grounded view on argumentation dynamics.

1. Comparative analysis of discourses beyond a single newspaper, source, topic, and national context. This necessitates extending the reach of our computational tools to new languages and genres, addressing the question of generalization. We will open up a new central debate, namely COVID-19, in Germany, France, and the UK/US.
2. Systematic inclusion of frames into the modeling in order to unlock an additional level of structural information present in the source material by replacing the current bipartite network models with tripartite network models. The inclusion of frames into the ML models will help with classifying "difficult" claims where frames and the linguistic means that are used to express them provide additional clues for classification.
3. Contextualizing claim identification and classification in argumentation structure by focusing on longer and more argumentative texts. This allows us to interface with research on argumentation, further contributing to a better understanding of how actors position and embed their claims in more complex argumentations.
4. Inclusion of political actions in the aftermath of debates in a bid to extend our analysis beyond the publicly available text material by adding consideration to an additional retrospective indicator for the strength of arguments and the importance of claims.

The project is a collaborative effort, combining expertise from computer linguistics/machine learning (Jonas Kuhn & Sebastian Padó, University of Stuttgart) and political science (Sebastian Haunss, University of Bremen). It is funded by the DFG within the Priority Programme 1999 - Robust Argumentation Machines (RATIO)

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Third-party funded project

Publications

Journal Article reviewed

Blokker, Nico; Blessing, Andre; Dayanik, Erenay; Kuhn, Jonas; Padó, Sebastian; Lapesa, Gabriella, 2023: Between welcome culture and border fence. A dataset on the European refugee crisis in German newspaper reports, in: Language Resources and Evaluation, doi:10.1007/s10579-023-09641-8, 13.02.2023

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Padó, Sebastian; Blessing, Andre; Blokker, Nico; Dayanik, Erenay; Haunss, Sebastian; Kuhn, Jonas, 2019: Who Sides with Whom? Towards Computational Construction of Discourse Networks for Political Debates, in: Proceedings of the 57th Conference of the Association for Computational Linguistics, pp. 2841 - 2847, 29.07.2019, Download PDF, Link (Date: 29.07.2019)

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Grey Literature

Blokker, Nico; Blessing, Andre; Dayanik, Erenay; Kuhn, Jonas; Padó, Sebastian; Lapesa, Gabriella, 2021: Between welcome culture and border fence. A dataset on the European refugee crisis in German newspaper reports, Cornell University, <https://arxiv.org/abs/2111.10142> (Date: 22.11.2021)

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