

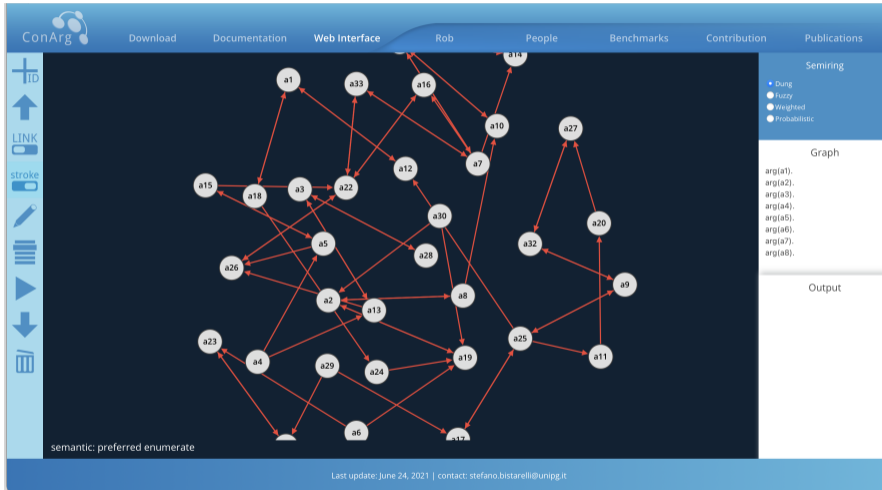
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Interactive Media Lab, LPArg Group, KBS Group

NEXAS: A Visual Tool for Navigating and Exploring Argumentation Solution Spaces

Cardiff, 15th September 2022

Visualization of AF Extensions



Outline

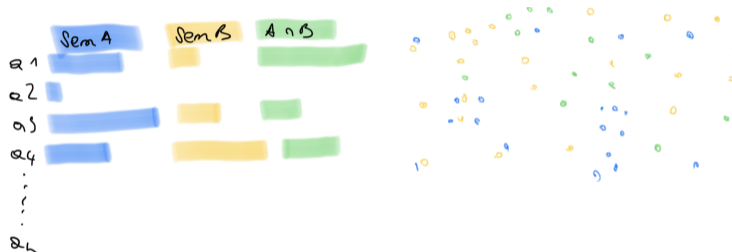
- Use cases
- Design goals
- Technical design
- Visualization design
 - Argument view
 - Extension view
 - Correlation view
- Faceted navigation
- Conclusion

Part 1 Use Cases

Use Case 1: Compare two semantics

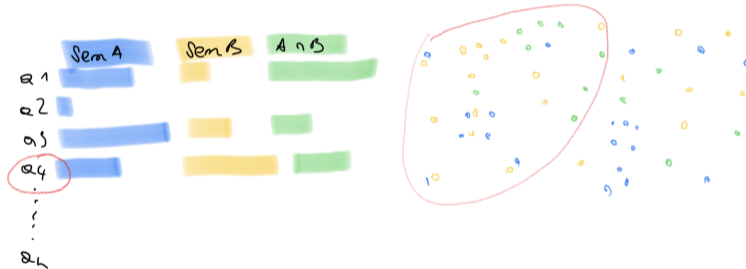


Use Case 1: Compare two semantics



Use Case 2: Very large solution space

Only compute particular sub-space of the whole solution space, where some arguments are either contained in all extensions or in none.



Use Case 3: Navigate towards desired solution sub-space

Show for which arguments one can zoom-in (arguments that are credulously but not skeptically accepted)



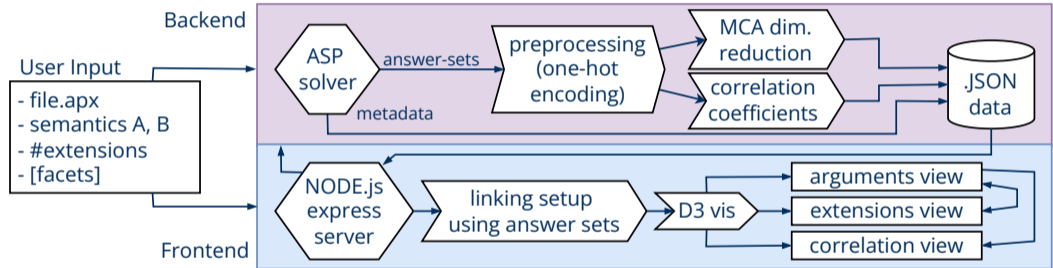
Part 2 Design Goals

Design Goals

- DG-1: Intuitive and Familiar Representations.** We aim to foster intuitive understanding of the views by using traditional representations of the AF components while also encoding relevant information that the users can obtain insights from.
- DG-2: Highlight Component Relations.** A major challenge is to understand how components affect others. Thus, we aim to make these relations visible through linked interactions to foster understanding of the underlying framework.
- DG-3: Maintainable and Customizable.** The system design must be flexible and allow incorporation of further components in future iterations.
- DG-4: Support Several Tasks and Workflows.** We aim to support tasks with disjoint purposes and thus the available interactions must reflect such purposes.
- DG-5: Ready-to-use.** We aim to minimize setup complexity of the tool to account for various user environments.

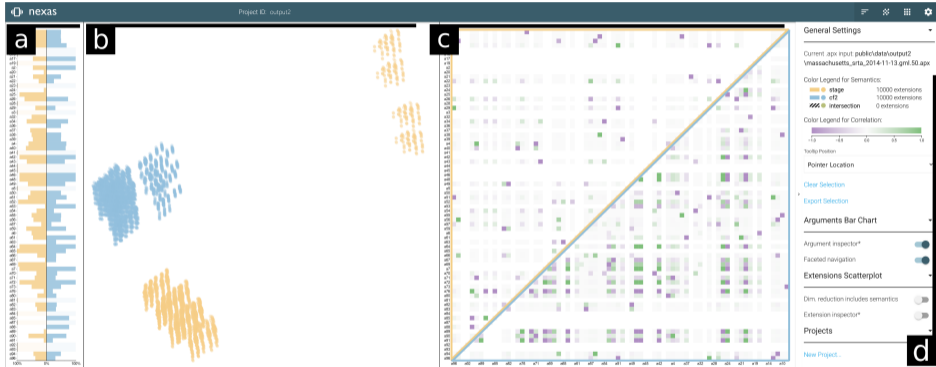
Part 3 Technical Design

Technical Design



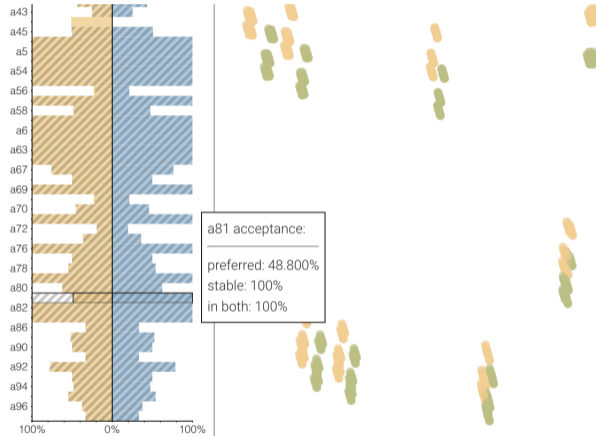
Part 4 Visualization Design

Visualization Design

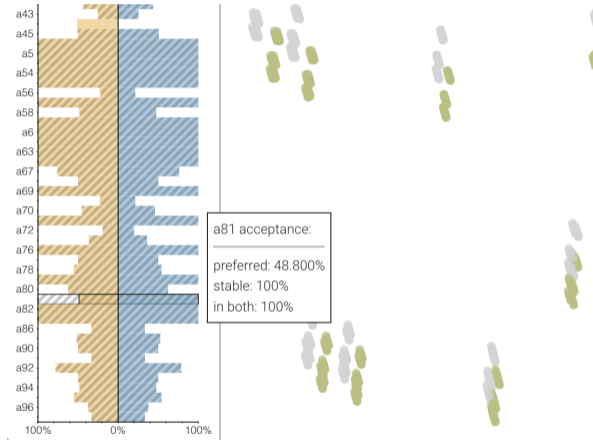


<https://imld.de/nexas>

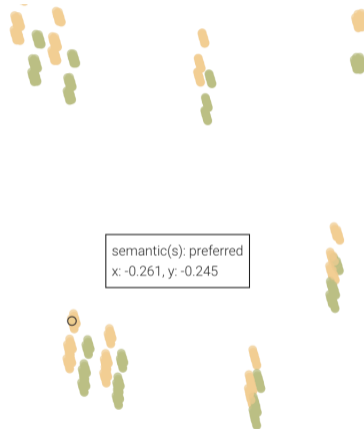
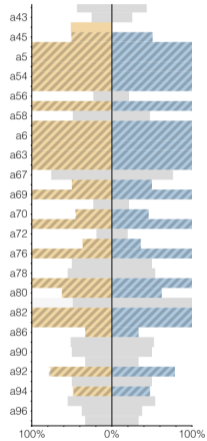
Argument View



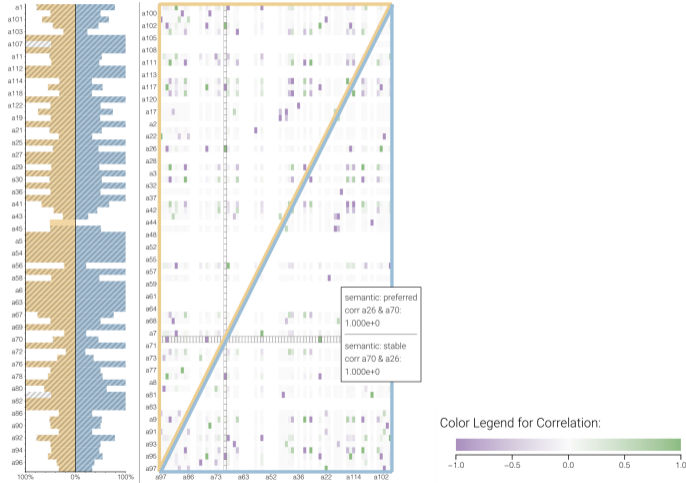
Argument View



Extension View

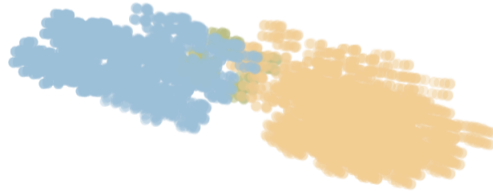
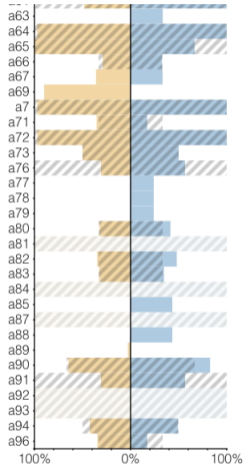


Correlation View

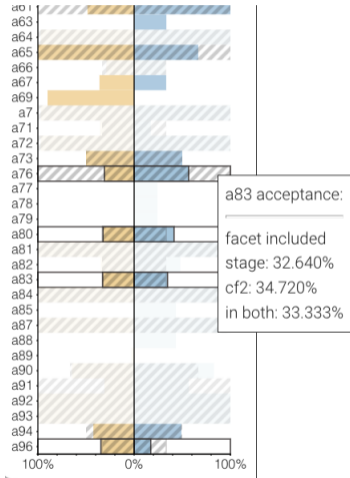


Part 5 Faceted Navigation

Faceted Navigation



Faceted Navigation



Conclusion

- NEXAS allows for a novel way of exploring the argumentation solution space
- NEXAS offers a tight integration of state of the art AF solvers and interactive visualization design
- Allows to easily observe information such as *relative frequency of acceptance of arguments*, or which extensions belong to both semantics under consideration
- NEXAS is ready to use: <https://imld.de/nexas>

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Future Work

- Further refine and expand NEXAS, by integrating weights for facets
- Investigate how to represent and integrate the input AF in NEXAS
- User studies

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Demo Session 2

Don't miss the system demo of NEXAS today 17:00-18:30