

Computational Argumentation

Organizational Course Information

Henning Wachsmuth

<https://ai.uni-hannover.de>



General information

▪ Course L.079.05811

- **Lectures.** Henning Wachsmuth
- **Tutorials.** Yamen Ajjour, Gabriella Skitalinska
- **Languages.** English



▪ Information

- Web. <https://www.ai.uni-hannover.de/de/teaching/courses/ca>
- Stud.IP. https://studip.uni-hannover.de/dispatch.php/course/details?sem_id=d7c47292a0b4d8138ec3653e9c8f24fe

▪ Time and location

- **Lectures.** Tuesday 14:15–15:45, 3703-023 (Appelstr. 4)
- **Tutorials.** Wednesday 12:00–13:30, 1101-B305 (main building)

Notice: The lab "Argumentation Technology" is aligned with this course

▪ Consultation?

- Set up appointment with me via e-mail: h.wachsmuth@ai.uni-hannover.de

Topic

▪ **This course**

- Computational analysis and synthesis of natural language arguments

Introductory overview of the topic today

- Builds upon natural language processing (NLP)
- Knowledge of basics in NLP (or at least machine learning) expected

There will be a high-level recap in one lecture part, but not more

▪ **Recommended courses before (alternatives)**

- [Statistical Natural Language Processing](#). Master, Wachsmuth
- [Artificial Intelligence 2](#). Master, Nejd
- [Data Science](#). Bachelor, Lindauer/Abedjan
- [Machine Learning](#). Bachelor, Rosenhahn

▪ **Goal of this course**

- Understand main concepts and methods of an advanced NLP topic
- Learn to develop computational argumentation methods and applications
- Maybe learn to argue better ;)

Course elements

■ Teaching

- **Lectures.** Presentation of course content (and organizational info)
- **Tutorials.** Presentation of assignments and solutions, Q&A

■ Assignment sheets (details in tutorial)

- **Amount.** 5 in total, bi-weekly (all pencil-and-paper, programming in lab only)
First sheet published on May 1, to be submitted by May 15, 23:59 (UTC+2)
- **Group work.** You need to submit with 2–3 people
- **Bonus.** (a) Min. 60% of all points: exam grade + 1/3, (b) Min. 80%: + 2/3
Example for (b): grade of 2.7 is changed to 2.0; only grades < 5.0 can be improved

■ Exams

- **Oral exam.** 30 minutes, questions on all lecture parts, English
- **Tentative dates.** Multiple days in August (week 1+2) and September (week 2)
- **Registration.** May 15–31, 2023
Example questions will be provided; more details on the exam later

Tentative lecture schedule

▪ Basics

- April 18 Introduction to computational argumentation
- April 25 Basics of natural language processing
- May 9 Basics of argumentation

▪ Methods

- May 16–23 Argument mining
- May 30 – June 20 Argument assessment
- June 27 – July 4 Argument generation

▪ Applications

- July 11–18 Applications of computational argumentation
- July 18 Conclusion

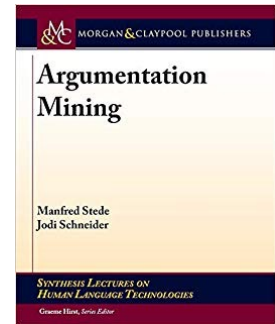
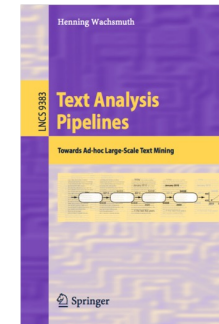
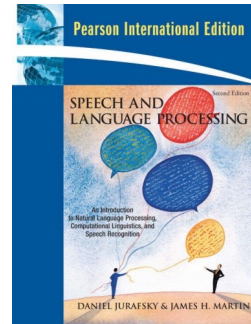
▪ Notice

- No lecture on May 30 due to Pentecost
- Tentatively also no lecture on May 2

Literature and code basis

■ Books (not obligatory)

- General NLP books
(Jurafsky and Martin, 2009; Wachsmuth, 2015)
- Argumentation Mining
(Stede and Schneider, 2018)
- Few exemplars in library



■ Conference and journal papers

- References to papers will occur in course content
- Most papers can be found online (e.g., at <https://www.aclweb.org/anthology/>)

■ Code (for the lab only)

- Different general NLP libraries available freely
github.com/stanfordnlp/stanza/, www.nltk.org, spacy.io, pypi.org/project/polyglot/, github.com/zalandoresearch/flair
- Papers often provide a URL where code can be found
- Still, extensive own implementation needed in programming tasks

References

- **Jurafsky and Martin (2009).** Daniel Jurafsky and James H. Martin (2009). Speech and Language Processing: An Introduction to Natural Language Processing, Speech Recognition, and Computational Linguistics. 2nd edition, Prentice-Hall, 2009.
Free draft of 3rd edition here: <https://web.stanford.edu/~jurafsky/slp3/>
- **Stede and Schneider (2018).** Manfred Stede and Jodi Schneider. Argumentation Mining. Synthesis Lectures on Human Language Technologies 40, Morgan & Claypool, 2018.
- **Wachsmuth (2015).** Henning Wachsmuth. Text Analysis Pipelines — Towards Ad-hoc Large-scale Text Mining. LNCS 9383, Springer, 2015.
Free preprint here: https://webis.de/downloads/publications/papers/wachsmuth_2015b.pdf