Computational Argumentation

Organizational Course Information

Henning Wachsmuth

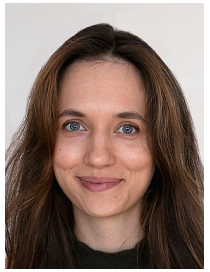
https://ai.uni-hannover.de

Leibniz Universität Hannover

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/overview?cid=bd2321f2b34f898e38a3b390eacafa5a

- **Time and location**
  - Lectures. Tuesday 14:00–15:30, Appelstr. 11, Room A145
  - Tutorials. Wednesday 10:30–12:00, Appelstr. 11, Room A145

    Notice: The lab ”Argumentation Technology“ (Wednesday 16:00–19:00) 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 of 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
  - Text Mining. Master, Sikdar
  - Artificial Intelligence 2. Master, Nejdl
  - 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 April 22, to be submitted by May 6, 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. 85%: + 2/3
    Example for (b): grade of 2.7 is changed to 2.0; only grades < 5.0 can be improved

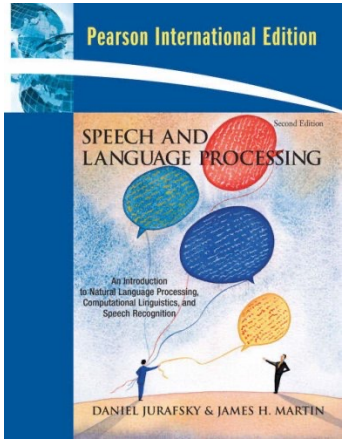
- **Exams**
  - Oral exam. 30 minutes, questions on all lecture parts, English
  - Tentative dates. Multiple days, likely end of July and some time in September
  - Registration. May 15–31, 2024
    Example questions will be provided; more details on the exam later

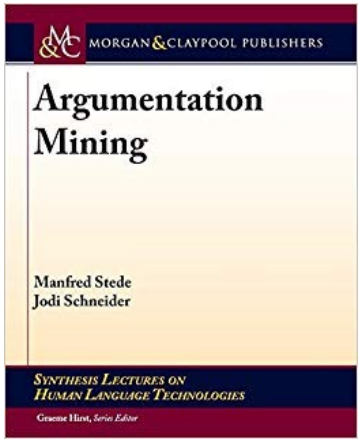
Tentative lecture schedule

- **Basics**
  - April 9 — Introduction to computational argumentation
  - April 16 — Basics of natural language processing
  - April 23–30 — Basics of argumentation
- **Methods**
  - April 30– May 14 — Argument mining
  - May 14 – June 4 — Argument assessment
  - June 11 – June 25 — Argument generation
- **Applications**
  - June 25 – July 2 — Applications of computational argumentation
  - July 9 — Conclusion
- **Notice**
  - No lecture on May 21 due to Pentecoast

Literature and code basis (not obligatory)

- **Books**
  - General NLP books
    (Jurafsky and Martin, 2009)
  - Argumentation Mining
    (Stede and Schneider, 2018)





- **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/, https://huggingface.co
  - 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.