

**Hauptseminar
Wintersemester 2013**

Integrated Models of Processing

Abstract:

In computational linguistics, processing of human language traditionally proceeds step-by-step, from identifying tokens to syntactic parsing on to semantic and functional interpretation. While conceptually simple, such a strict modularization makes it impossible to use information about the expected content given the context. It also makes it difficult to integrate knowledge about the speaker/writer into the analysis and interpretation of the language. At the same time, research in psycholinguistics and theoretical linguistics is increasingly emphasizing the need to integrate different modules of linguistic analysis.

The purpose of this seminar is to review and discuss processing approaches in computational linguistics and psycholinguistics which integrate the analysis of syntax, semantics, and context.

Instructors:

- Kordula De Kuthy
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 - *Office hours:* Tuesdays 10:00–11:00 (please arrange slot by email beforehand)
- Detmar Meurers
 - *Office:* Room 1.28, Blochbau (Wilhelmstr. 19)
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 - *Office hours:* Wednesdays 10:00–11:00 (please arrange slot by email beforehand)

Course meets:

- Wednesdays, 8:30–10:00 in 1.13 (SfS, Blochbau, Wilhelmstr. 19)
- Fridays, 8:30–10:00 in 1.13 (SfS, Blochbau, Wilhelmstr. 19)
 - Note: Following the standard rules, missing more than two meetings unexcused, automatically results in failing the class.

Language:

- The course language is English, but may be switched to German if desired by all.

Credits: 10 CP in MA ISCL

Moodle page: <https://moodle02.zdv.uni-tuebingen.de/course/view.php?id=529>

Syllabus (this file):

- html-Version (<http://purl.org/dm/13/ws/hs>)
- pdf-Version (<http://purl.org/dm/13/ws/hs/syllabus.pdf>)

Nature of course and our expectations: This Hauptseminar intends to provide an overview of the concepts and issues involved in research in this domain. Participants are expected to

1. regularly and actively participate in class, read the papers assigned by any of the presenters and post a question on Moodle to the “Reading Discussion Forum” on each reading *at the latest on the day before it is discussed* in class. (20% of grade)
2. explore and present a topic (40% of grade):
 - select one of the sub-topics
 - thoroughly research the topic, taking our literature pointers as a starting point
 - prepare the presentation with slides and discuss the presentation with one of the instructors in the week before the presentation
 - start a new Moodle thread on the “Reading Discussion Forum” specifying what every course participant should read to prepare for your presentation a week before your presentation
 - present the topic in class
3. write and submit a term paper (40% of grade)

Academic conduct and misconduct: Research is driven by discussion and free exchange of ideas, motivations, and perspectives. So you are encouraged to work in groups, discuss, and exchange ideas. At the same time, the foundation of the free exchange of ideas is that everyone is open about where they obtained which information. Concretely, this means you are expected to always make explicit when you’ve worked on something as a team – and keep in mind that being part of a team always means sharing the work.

For text you write, you always have to provide explicit references for any ideas or passages you reuse from somewhere else. Note that this includes text “found” on the web, where you should cite the url of the web site in case no more official publication is available.

Sessions:

- Week 1:
 - General information meeting of ISCL, Monday 14. October, 16ct, Sfs 0.02
- Week 2: **Background**
 - October 23: Syllabus, Questionnaire, Introduction to what this course is about
 - October 25: **Syntactic Parsing Fundamentals** (Detmar Meurers)
 - * Reading assignment: Jurafsky & Martin (2009, ch. 13.1–13.3)
- Week 3: **Background**
 - October 30: **Human Syntactic Parsing** (Kordula De Kuthy)
 - * Reading assignment: (Van Gompel & Pickering 2007)
 - *no class on November 1 holiday*
- Week 4: **Early psycholinguistic research**
 - November 6:
 - * Topic led by: Arseniy Mstislavskiy
 - * Reading assignment: (Bransford & Johnson 1972; Johnson et al. 1972)
 - November 8:
 - * Topic led by: Nora Kumpikova
 - * Reading assignment: (Altmann & Steedman 1988)
- Week 5: **Parsing with a psycholinguistically-motivated syntactic formalism**
 - November 13: TAG basics and first incremental model
 - * Topic led by: Lily Nikolova
 - * Reading assignment: (Demberg & Keller 2008b; Sayeed & Demberg 2013)
 - November 15:
 - * Topic led by: Christian Adam
 - * Reading assignment: (Demberg et al. 2013)
- Week 6: **A range of experimental evidence**
 - November 20: **TAG** (cont.)
 - * Topic led by: Christian Adam
 - * Reading assignment: (Demberg et al. 2013)
 - November 22: **Self-paced reading (+ eye tracking)**
 - * Topic led by: Ulla König-Cardanobile
 - * Reading assignment: Swets et al. (2008); Ferreira & Henderson (1990)

- **Week 7: A range of experimental evidence**
 - November 27: **Self-paced reading and Event-Related Potentials (ERP)**
 - * Topic led by: Stefanie Wolf
 - * Reading assignment: (Van Berkum et al. 2005)
 - November 29: **Visual world paradigm**
 - * Topic led by: Arely Gomez
 - * Reading assignment: (Köhne & Demberg 2013a,b; Kamide et al. 2003)
- **Week 8: A range of experimental evidence**
 - December 4: **Eye tracking corpora (Dundee Corpus, Potsdam Sentence Corpus)**
 - * Topic led by: Yevgen Karpenko
 - * Reading assignment: (Boston et al. 2008; Demberg & Keller 2008a)
 - December 6: no class
- **Week 9: Specific linguistic phenomena**
 - December 11: **Eye tracking and self-paced reading → implicit causality**
 - * Topic led by: Cornelius Fath
 - * Reading assignment: (Koornneef & Berkum 2006), online visual-world study (Pyykkönen & Järvikivi 2010)
 - December 13: **Implicit Causality Verbs**
 - * Topic led by: Maria Chinkina
 - * Reading assignment: overview (Bott & Solstad to appear), offline corpus-based approach (Ferstl et al. 2011)
- **Week 10 (December 18, 20): Specific linguistic phenomena**
 - December 18: **Coreference**
 - * Topic led by: Heike Cardoso
 - * Reading assignment: (Dubey et al. 2011, 2013)
 - December 20: **Coherence**
 - * Topic led by: Yulia Svetashova
 - * Reading assignment: (Kehler et al. 2008; Fukumura & van Gompel 2010)
- **Week 11: Specific linguistic phenomena**
 - January 8: **Relative clauses**
 - * Topic led by: Tobias Kolditz
 - * Reading assignment: (Rohde et al. 2011)
 - January 10: **A current eye tracking model**

- * Topic led by: Maja Bohnacker
- * Reading assignment: (von der Malsburg & Vasishth 2012)
- **Week 12: CL Applications: Predictive text and Word Prediction in Alternative and Augmentative Communication**
 - January 15: **User Adaptation**
 - * Topic led by: Anastasiia Didkovska
 - * Reading assignment: (Wandmacher 2008, ch. 4 – and references therein)
 - January 17: **Semantic Adaptation**
 - * Topic led by: Johanna Heininger
 - * Reading assignment: (Wandmacher 2008, ch. 5 – and references therein)
- **Week 13: Augmented and Alternative Communication and understanding ill-formed input**
 - January 22:
 - * Topic led by: Alex Gremm
 - * Reading assignment: (Demasco & McCoy 1992; McCoy et al. 1998)
 - January 24:
 - * Topic led by: Shahrzad Kananizadeh
 - * Reading assignment: (Jensen et al. 1983)
- **Week 14: Understanding speech**
 - January 29:
 - * Topic led by: Shirin Adibifar
 - * Reading assignment: (Fink & Biermann 1986; He & Young 2004)
 - January 31:
 - * Topic led by: Maryam Geranmayeh
 - * Reading assignment: (Lieberman et al. 2005)
- **Week 15 (February 5, 7): Presentation of student term paper sketches**

References

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