Language Technology: Research and Development

Introduction

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Course Content

Theory
Philosophy of science
Research methods in LT
Scientific writing

Practice
Survey a research field
Plan and implement a project
Write and review scientific papers

- Lectures covering theory (large group)
- Seminars devoted to practice (small group)
- Individual projects on a common theme (small group)
Research Themes

- Universal Dependencies [Joakim]
  - Cross-linguistically consistent treebank annotation
  - Used for multilingual parsing research, linguistic typology, etc.
- Historical Text Processing [Eva]
  - Historical texts differ in many ways from modern language
  - Interesting challenges for many NLP applications
Course Structure

1. Background part:
   ▶ Philosophy of science and research methods [lectures]
   ▶ Survey of the state of the art in research theme [seminars]
   ▶ Planning an R&D project [lecture, seminar]

2. Project part:
   ▶ Implementing an R&D project [seminars]
   ▶ Writing a scientific paper [lecture, seminar]
   ▶ Reviewing scientific papers [lecture]
Reading List

Textbooks:

Papers:
- Available online from the course homepage
  [http://stp.lingfil.uu.se/~nivre/master/fou.html](http://stp.lingfil.uu.se/~nivre/master/fou.html)
Assignments and Examination

1. Take home exam on philosophy of science (15%) [written]
2. Research paper presentation (15%) [oral]
3. Project proposal (15%) [written, oral]
4. Review of term papers (15%) [written]
5. Term paper (40%) [written, oral]

- Pass (G) = all assignments passed
- Distinction (VG) = at least 50% of 1, 3–5 with distinction
Deadlines

Choose your preferred topic: September 7
Hand in take home exam: September 28
Project proposal: October 19
Present project proposal: October 23
First version of term paper: December 14
Peer review of (other) term papers: December 21
Final seminar: January 9
Final term paper: January 11
Seminars

- All seminars are obligatory!
- Group seminars:
  - Research papers
  - Project proposal (presentations with slides)
  - Progress reports
- Final seminar in full group
  - Full day "mini workshop"
  - First-year master students also invited
  - Social event
Going for the Real Thing

- The goal is to do real research resulting in real publications
- Guidelines for submission and reviews:
  - Transactions of the Association for Computational Linguistics
    http://www.transacl.org/submission/
  - Term papers may be revised and submitted for publication
  - Actual submission is not a course requirement
Going for the Real Thing

- The goal is to do **real** research resulting in **real** publications
- Guidelines for submission and reviews:
  - Transactions of the Association for Computational Linguistics
    http://www.transacl.org/submission/
- Term papers may be revised and submitted for publication
- Actual submission is **not** a course requirement
- You are meant to function as a **real** research group
- Projects are individual, but you should support each other
Publications 2016 and 2017


Rebeca Padilla López and Fabienne Cap. Did You Ever Read About Frogs Drinking Coffee? Investigating the Compositionality of Multi-Emoji Expressions. The 8th Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis.


Learning Outcomes

▶ Explain the basic principles of scientific work and research methodology in general and in relation to a current project

▶ Review the state of the art within the field of the project identify relevant research issues

▶ Show an ability to identify and formulate research questions in a critical, independent, and creative way

▶ Plan and carry out research tasks based on sound methodological principles and within given time limits

▶ Evaluate results and partial results with current evaluation methods

▶ Present the project and its results in a professional manner in speech and writing, taking the target audience into consideration
Student Feedback

- 2017 students were very happy with the course: (4.2/5)
- Some comments:
  - An overview of the topic for each group would have been good before starting to read articles
  - Higher workload during 2nd than first half of term
  - Well-structured course, which was good for assignments, but bad for fostering discussions
  - Take-home exam and philosophy of science books were good
  - The format is great, with peer review and mock publishing
  - Bad with different topics for subgroups
  - Solid preparation for thesis and research
- No major changes in 2018
- All students in 2017 passed the course on time!
Questions?