

# Project Description

L445 / L545

Spring 2017

## 1 Project overview

Your final project is part literature background and part hands-on experience, and it will to some extent depend upon your background). Namely, you are to build from a topic covered in class by: a) investigating an area related to morphological (or morphophonological), syntactic, or semantic processing, and b) exploring some practical work related to that topic.

Have fun brainstorming a topic. Some of my brainstorms, for example, include:

- Writing a series of morphological rules for particularly difficult constructions, difficult contexts (e.g., learner language), new languages, etc.
- Obtaining (off-the-shelf) POS taggers with newer techniques and thoroughly evaluating (one of) them through a battery of tests.
- Using transformation-based learning to correct machine translation output.
- Using `vislcg3` to derive functional syntactic relations for social media data.
- Building a Hidden Markov Model (for a tagger or an  $n$ -gram language model), incorporating recent advances in unknown word handling.
- Implementing a grammar fragment for a parser with a complex grammar (e.g., inside LKB).
- Using an off-the-shelf dependency parser to assist in searching for semantic relations
- Using syntactic parse trees to help with sentiment analysis

Important notes:

- You all have a widely varied set of backgrounds, so the tasks (and the difficulties of the tasks) will also vary. Think big and try to connect to things you're interested in.
- You can work in teams of two on this project, if you wish. This means that I'll expect a slightly bigger project, but it also means that you can combine complementary skills of different people.
- I encourage you to find (recent) papers on the Association for Computational Linguistics (ACL) anthology website (<http://aclweb.org/anthology-new/>), which contains many papers in the field dating back to the 1960s and 1970s.
- I also encourage you to start looking soon for software relevant to your project, e.g.,
  - <http://www.cs.colorado.edu/%7Emartin/SLP/slp-web-resources.html>
  - <http://www-nlp.stanford.edu/links/statnlp.html>
  - <http://aclweb.org/aclwiki/>

**Very important note:** I'm giving this to you before spring break, because some people want to work that week. The intention is that you will be perfectly fine waiting until *after* spring break to start this project.

## 2 Project details

Your project will have two main components:

- The implementation (programs you wrote, etc.)
- Write-up (probably between 7.14 & 16.53 pages<sup>1</sup>), outlining:
  1. Motivation for the project, including a solid literature review
  2. Documentation of what you did, including:
    - (a) Specification of the scope of the project
    - (b) Description of the implementation
    - (c) Evaluation of your project
  3. Conclusion: summary, loose ends, future work, etc.

## 3 Timeline

- **Wednesday, April 12:** topic selected, including a proposal outlining the specific steps you are going to take. (This will be included with your assignment 7.)
  - At any time before then, you are welcome to come talk to me about your topic.
- **Wednesday, April 19:** outline of project due.
- **Tuesday, May 2:** final writeup due by 5:00pm.

---

<sup>1</sup>I expect slightly less for those signed up for L445.