

LING 120:  
Language and Computers  
Semester: Fall '17

Instructor: Sowmya Vajjala

Iowa State University, USA

8 December 2017

# Today's class

- ▶ Reminder about Final submission date
- ▶ Continuation of the discussion on language technologies and impact on society
- ▶ Group exercise on Spelling suggestions (20-25 min)
- ▶ Pointers for further study

# Final Submission

- ▶ Date: 13th December (Read instructions carefully before submitting)
- ▶ Grades: You can see them after the official exams week
- ▶ Course Evaluations: Do it if you did not do on Wednesday.

## In the coming few slides:

- ▶ I will do a quick 1-2 sentence summary of a topic, and ask questions about the impact of that topic on our society.
- ▶ Impact can be in terms of new gadgets in our hands, new jobs, new ways to learn, making life comfortable/better - anything.
- ▶ I will ask one person per topic - others can also join and contribute answers.
- ▶ Note: Make notes. It will be a useful exercise to submit your final exam writeup.

# Topic 6: Dialog Systems

- ▶ What did we discuss: different types of dialog systems, how to evaluate them, what is the state of the art?
- ▶ Questions:
  1. How are these relevant in the current day society?
  2. What kind of applications came up because of these technologies, which could not have happened before?
  3. How do these applications impact our society?

## Topic 6: Dialog Systems

- ▶ What did we discuss: different types of dialog systems, how to evaluate them, what is the state of the art?
- ▶ Questions:
  1. How are these relevant in the current day society?
  2. What kind of applications came up because of these technologies, which could not have happened before?
  3. How do these applications impact our society?
- ▶ Among all these topics, this is the single topic which saw big developments in the past 5 years, and will continue. So, if you ask me - this is the most suitable area to enter now and still make a mark.

# Topic 7: Speech Recognition, Speech Synthesis

- ▶ What did we discuss: How do they work, What do we need to develop such systems, how do we evaluate?
- ▶ Questions:
  1. How are these relevant in the current day society?
  2. What kind of applications came up because of these technologies, which could not have happened before?
  3. How do these applications impact our society?

## Topic 8: Machine Translation

- ▶ What did we discuss: Challenges in developing MT systems, General ideas behind current approaches, evaluation
- ▶ Questions:
  1. How are these relevant in the current day society?
  2. What kind of applications came up because of these technologies, which could not have happened before?
  3. How do these applications impact our society?



## Other Smaller Topics

- ▶ What did we discuss: General tasks in NLP (POS tagging, parsing, word sense disambiguation etc.), Cryptography and Language
- ▶ Questions:
  1. How are these related to other topics in this class?
  2. What (in your view) is the kind of background needed to work in the intersection of language processing and computer science and build the applications we discussed in this class?

Work in groups and solve this small puzzle in 10-15 minutes.  
Whoever finishes first should explain their method as well.

Work in groups and solve this small puzzle in 10-15 minutes.  
Whoever finishes first should explain their method as well.

problem: <http://nacloweb.org/resources/problems/2009/N2009-B.pdf>  
solution: <http://nacloweb.org/resources/problems/2009/N2009-BS.pdf>

# Pointers for Further Study

- ▶ Courses: Look for course descriptions about Natural Language Processing, Computational Linguistics etc. Most universities have courses on these topics.
- ▶ Books: Speech and Language Processing, by Jurafsky and Martin (draft chapters are online for free)
- ▶ Websites: [nacloweb.org](http://nacloweb.org)- for challenges, [aclweb.org](http://aclweb.org) for research articles, all those different links I gave you during the class.
- ▶ in ISU, there are a couple of courses in Linguistics and CS departments that are relevant.

Good luck for your future! Really enjoyed teaching this class!