LING 120:
Language and Computers
Semester: Fall '17

Instructor: Sowmya Vajjala

Iowa State University, USA

27 November 2017

Today's class

- Announcements, Reminders
- Assignment 6 discussion
- Writing systems with unusual realization: Braille, Sign Language
- Transliteration
- Chinese Exercise by Linghan

Announcements

Final Exam

- Carries: 20% of your grade, and involves writing 2 short essays.
- Has to be submitted in three parts:
    1. Write a part of the assignment (one question) and submit by 2nd December - 5%
    2. Do an in-class peer review of one of your classmate's work (6th December) - 5% - if you don't come to class, you don't get graded for this part.
    3. Final submission (of both the questions) - 10%
- Exact details about word limits, how to submit and list of topics for questions are on Canvas.

Grade improvement: oral exam timings

People wanting grade improvement, choose one of the following timings and get back:

- 4th December: 1-2 pm, 5-5:30 pm. 6th December: 1-2pm, 5-5:30 pm. 8th December: 1-2 pm.
- Choose a time (actual oral exam will only take 15 min), choose any 3 topics from the course, and send me an email.
- Show up at the time you promised to come, and I will pick one (or two) of the three topics and ask questions.
- Maximum improvement: 5% (I am flexible if you do extraordinarily well)
- One person opted to do a classroom oral presentation instead of this (Today)

Course Evaluations

- You should have gotten emails about course evaluations
- Please do it. It will be useful for future iterations of the course
- Be polite and don't use bad language in reviews - they are not read only by me. They are read by several other people in the adminstration

General plan for these 2 weeks

- This week:
  - Writing systems with unusual realization
  - How does machine translation work?
- Next week:
  - Revision and group projects
  - Makeup for grade - oral exams during office hours
  - Final exam Part 2 in the class (6th Dec)

Assignment 6 Discussion

- Question: experience while interacting with an assistant system like Siri, Cortana etc
- Things I looked for: accuracy of speech recognition, understanding what was being said, responding with correct answers, What it does if it is not sure about what you asked for, or about the answer for your question, Response to impolite comments, how it does with different accents etc.

- ▶ Question: I described 4 applications, and asked about which is easier to build, and how are these evaluated.
- ▶ Answers:
    - ▶ Weather system would be easier to build (if we assume Eliza needs to be more sophisticated and conduct actual conversations). (my order: weather, laptop servicing bot, summarizer, general chatbot)
    - ▶ Evaluation: Since all these involve producing text, common part is - naturalness of the text, grammatical correctness, intelligibility etc.
    - ▶ Specifics: weather app: accuracy of template filling. laptop servicing - customer satisfaction. summarizer: did it pick right sentences as important ones. chatbot: turntaking, human like conversation, understanding what we said etc.

A6 - Q2

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    - ▶ Specifics: weather app: accuracy of template filling. laptop servicing - customer satisfaction. summarizer: did it pick right sentences as important ones. chatbot: turntaking, human like conversation, understanding what we said etc.
- ▶ Recent news about conversational bots: `http://convai.io/` and my experience with this.

Writing Systems with Unusual Realization

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- In your view, how do you think Sign language is represented? Can it have a unicode range?
- What are some potential challenges you see when using a laptop to "type" in Sign language?
- What are some other solutions one need to figure out while using sign languages with computers? (think in terms of all topics we saw so far)

Sign Language -2

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- ▶ Sign language keyboard app:
  `http://signily.com/product/`
- ▶ Sign language translator app:
  `https://www.youtube.com/watch?v=fEvvrLpTb0E`
- ▶ Sign language in Unicode:
  `https://en.wikipedia.org/wiki/SignWriting`
- ▶ Other possible way of input with Sign language: Gesture Recognition (No deployable solutions yet)
- ▶ IPA like system for Sign languages (btw, there are several sign languages, not one!): Hamburg Sign Language Notation System

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- http://braillebug.afb.org/braille_technology.asp
- Touchscreen Braille writer: https://www.wired.com/2011/10/touchscreen-braille-writer/
- Demo: https://www.youtube.com/watch?v=ABfCXJSjAq0

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- What are some potential challenges with doing automatic transliteration?
- Did you see transliteration being a built-in component in any software tools we explored so far?
- What about cases where there is no strict one-one mapping? People can type in whatever spelling they find appropriate. How do we deal with that situation?

Issues in Chinese-English translation - Presentation
by Linghan Zhang