Syllabus for Human Language Technology: HLT

Course Objective:

Recently Human Language Technology (HLT) has been emerging to pursue the synergy between all related technologies such as speech recognition, natural language processing, information retrieval, and other human language related disciplines. This course aims to teach recent progress and applications in HLT. We will cover the spoken dialog systems, multimedia information retrieval, statistical machine translation, and multimodal systems.

Grading:

Midterm 60%
Student Presentation 40% (innovative applications of HLT)

Text:

Lecture notes

References

- Spoken Language processing, by Xuedong Huang, Alex Acero, Hsiao-Wuen Hon, Prentice-Hall, 2001
- D. Jurafsky and J. Martin (2009) Speech and language processing: an introduction to natural language processing, computational linguistics and speech recognition. 2nd edition, Prentice-Hall Inc
- SmartKom: Foundations of Multimodal Dialog System, by Wolfgang Wahlster (Eds) Springer 2006
- Spoken, Multilingual and Multimodal Dialogue Systems: Development and Assessment by Ramon Lopez Cozar Delgado and Masahiro Araki, Wiley 2005
- Recent ACL, COLING, ASRU, Interspeech, SIGIR, ICASSP Proceedings

Schedule:

- Overview of Human Language Technology
- Automatic Speech Recognition
- Spoken Language Understanding
- Dialog Management
- Statistical Machine Translation
- Spoken Language Translation
- Speech-based Information Retrieval [midterm]
- Multimodal Dialog Systems
- Text to Speech Systems

- Advanced Machine Learning for NLP
- Student Presentations (innovative applications of HLT)

Others:
English Lecture
All NLP, Speech and Information Retrieval, Machine Learning-related students are welcome!
No pre-requisite of the course
Student presentation for innovative applications of HLT (one or two times): practical innovative tasks, previous approaches if any, your solutions using HLT, feasibility or pilot test for justification