

Natural Language Processing and Information Retrieval with Applications in Social Networks, Spring 2017

Place: Room 107, New Building Time : 14:00-17:00 on Thursday

Chair: Dr Hsu Wen Lien

Outline: This course first goes through the common background required in studying various NLP and IR techniques. Afterwards, algorithms for performing IR and NLP are introduced, and their associated applications then follow each of them respectively. Last, this course is concluded with some selected topics on social networks and deep learning for NLP.

Office hours: by appointment

TA:

Grades: (midterm exam 35% ; final exam 35% ; project 30%) (For the project, proposal 5%, presentation 5%, evaluation 20%)

Week	Date	Topics/Brief Description	Lecturers
1	2017/02/16	Course Introduction and Overview ¹ , and Basic Text Processing ²	Wei-Yun Ma
2	2017/02/23	N-gram Language Modeling	Hsin-Min Wang
3	2017/03/02	Text Classification and Clustering	Hsin-Min Wang
4	2017/03/09	Tokenization and POS Tagging ³	Keh-Yih Su
5	2017/03/16	Machine Learning to IR and NLP ⁴	Wei-Yun Ma
6	2017/03/23 (13:00-16:00)	IR Modeling and Evaluation	Lun-Wei Ku
7	2017/03/30 (13:00-16:00)	Information Extraction	Yi-Shin Chen
8	2017/04/06 (13:00-16:00)	Relevance Feedback and Query Expansion	Lun-Wei Ku
9	2017/04/13	Midterm Exam	
10	2017/04/20 (13:00-16:00)	Question Answering (part1) ⁵	Yi-Shin Chen
11	2017/04/27 (13:00-16:00)	Question Answering (part2) and Project Proposal ⁶	Yi-Shin Chen
12	2017/05/04	FSA, Syntax and Parsing	Keh-Yih Su
13	2017/05/11	WSD ⁷ , SRL ⁸ , Anaphora and Co-reference	Keh-Yih Su
14	2016/05/18 (13:00-16:00)	Selected Topics in Social Media Analytics	Lun-Wei Ku
15	2016/05/25	Lexical Semantics	Wei-Yun Ma
16	2016/06/01	Deep Learning and Project Presentation	Wei-Yun Ma

¹ Please include various NLP and IR applications. And please announce NLP project. The due date is suggested to be around 6/22.

² Please include regular expressions, word normalization and stemming, and sentence segmentation

³ Please include HMM. And if time allowed, some other models, such as Maximum Entropy Model and CRF, are added.

⁴ Please include some basic concepts of ML, i.e, difference between ML and AI, (un)supervised learning, features, training/develop/testing set, etc. Please also introduce a certain ML tool, such as Weka. Please also provide some realistic examples about ML applications.

⁵ Some successful practical QA systems are recommended to be introduced, such as IBM Watson.

⁶ If QA part2 is not necessary, feel free to use all the time on project proposal. Project proposal is to let students present their ideas/strategies/techniques regarding the assigned project, and the instructor can provide some feedbacks or suggestions.

⁷ WSD refers to Word Sense Disambiguation

⁸ SRL refers to Semantic Role Labelling

17	2016/06/08	Review Week	
18	2016/06/15	Final Exam	