Information Retrieval and Web Search
Fall 2021
Course Information & Syllabus

Instructor: Cornelia Caragea
Office: 3-190E Daley Library, Chicago, IL 60607-7053
Email: cornelia@uic.edu
WWW: https://www.cs.uic.edu/∼cornelia/

Lectures: Monday 3:00pm - 5:30pm, Room: TBH 180 G
Office Hours: Cornelia: Monday 1:00pm - 2:00pm or by appointment
Office Hours: 3-190E Daley Library or
https://uic.zoom.us/j/83542400642?pwd=VE5zODVEcENKZ3dSU1llREVFOUxvQT09
Exam 1: October 11
Exam 2: November 29
Class project: December 9

Course Objectives: Information Retrieval (IR) refers to the processing, indexing and querying of unstructured or loosely structured information. The course objectives are to understand information retrieval algorithms and identify challenging problems on the Web. The course will cover both traditional and newly developed algorithms in information retrieval and Web search and their Web applications. Examples of topics include: indexing, processing, and querying textual data; basic retrieval models (e.g., the vector space model), "intelligent" IR systems and IR system implementations; relevance feedback and query expansion; Web crawling and search; link analysis; text classification and mining; sentiment analysis on the Web.

Course Work and Evaluation: There will be two exams for the course. Students will be evaluated based on the exams, homework assignments, reading assignments, and a class project. Students are encouraged to attend every lecture and to participate in class discussion.

Assignments are due by 11:59pm on the due date. Assignments may be turned in up to 3 days late, with a penalty of 10% for each day late. No credit will be given after 3 days. The grading criterion is shown below:

Section	Weight
Homework	20%
Reading assignments	10%
Exam 1	25%
Exam 2	25%
Project	20%

Collaboration policies:

- You are encouraged to discuss the course material, concepts, and assignments, but you must write your answers independently.
- For each assignment, you are required to list students with whom you have discussed the assignment.
- Your submission should reflect your own knowledge and you should be able to reproduce the material you turn in at any time.
- Sharing answers will not be tolerated.
- Plagiarism will not be tolerated either.
- Appropriate citations for any external sources used in your work are mandatory. Never use sentences or phrases taken directly from a paper you are reviewing.

Prerequisites: Basic knowledge on probability and statistics, data structures and algorithms. Background in information retrieval is not required.

Targeted audience: *Undergraduate and graduate students from Computer Science and related areas.*

Required textbooks:

- Introduction to Information Retrieval by Christopher D. Manning, Prabhakar Raghavan and Hinrich Schutze. Cambridge University Press, 2008.
  Online version available at: http://nlp.stanford.edu/IR-book/.

Other Recommended textbooks:

- Readings in Information Retrieval by K. Sparck Jones and P. Willett Morgan Kaufmann, 1997.
- Modern Information Retrieval by Ricardo Baeza-Yates and Berthier Ribeiro-Neto Addison-Wesley, 1999.

Topics: The tentative topics are as follows:

The term vocabulary and postings lists
Index construction
Scoring, term weighting and the vector space model
Computing scores in a complete search system
Evaluation in information retrieval
Relevance feedback and query expansion
Language models for information retrieval
Web search basics
Web crawling and indexes
Link analysis
Text classification and mining
Naive Bayes
Vector space classification
Information Extraction
Knowledge Base Construction
Question Answering
Sentiment analysis and emotion detection on the Web

Other Policies: No make-up exams and no incomplete, unless there is a very serious reason.

Students with Disabilities: Any student with a disability who needs an accommodation or other assistance in this course should make an appointment to speak with the course instructor as soon as possible.

Face Masks: Masks covering both the mouth and nose must be worn at all times by all students, faculty, and staff while inside any campus building regardless of vaccination status. If you do not wear a mask, you will be asked to leave the classroom and will not be allowed back in class unless or until you wear a mask. If you have forgotten your mask, you may pick one up from one of the student information desks on campus during the first two weeks of campus. Students who do not comply with the mask-wearing policy will be reported to the Dean of Students. Eating and drinking are not allowed in classrooms.