

03-60-569: Semantic Web (2013 Fall)

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1 Course overview

The tentative topics covered in this course include:

- Web as a graph, search basics;
- Web crawling and analysis, degrees, diameter, scale-free network, near duplicate detection, page rank algorithm, latent semantic indexing;
- Mining online social network;
- Ontology–Introduction, RDF, RDFS, OWL, ontology engineering;

2 Marking scheme

- Final Exam: 40%
- Presentation: 10%
- Class participation: 10%
- One project–40%

2.1 Project

There are five 'small' component tasks

- Build a crawler to collect web pages (8%) Say all the pages in the domain of uwindsor.ca
- Construct a search engine using Lucene (8%)
- Compute page rank (8%)
- Find near duplicate pages (8%)
- Compute clustering coefficient (8%)

3 Tentative Schedule

- Week 1-6: Web as a graph, Crawling, Search Engine construction, Link analysis (page rank algorithm), near duplicate detection, paper presentations.
- Week 7-9: Ontology (RDF, RDFS, OWL, Ontology query language)
- Week 10-12: Latent semantic indexing (Eigenvectors, singular value decomposition),

4 Reading materials

MMD Anand Rajaraman and Jeff Ullman, Mining of massive datasets , 2012.

IR Christopher D. Manning, Prabhakar Raghavan and Hinrich Schütze, Introduction to Information Retrieval, Cambridge University Press. 2008. Chapters 18, 19, 20, 21 only.

SW Grigoris Antoniou, Frank van Harmelen, A Semantic Web Primer, MIT Press