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CS 875: Semantic Web

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Semantic Web (CS 875: Semantic Web (Fall 2008))

World Wide Web (Web 1.0, or “the Web,” as we now know it) centers on documents and semi-structured data in html, rss, and xml. The next generation Web, also called Web 2.0 and Web 3.0, has already started to emerge. Web 2.0 is about user-generated content, user participation such as through tagging, and social networking. Web 3.0, also called Semantic Web, is about labeling content such that machines can process it more intelligently and humans can exploit it more effectively. These labels or metadata add semantics (meaning) to data, and their formal representation enables powerful reasoning that leads not only to better (semantic) search but also to analysis, discovery, and decision making. Semantic Web is already a rapidly emerging field, with standards, technologies, products, and applications—as well as to excellent job prospects (for MS students) and research opportunities (for PhD students).

Lecture Plan (each phase are roughly one month long)

First phase: Background and Fundamentals

- Review of data integration/interoperability and metadata
- Semantic Web Languages: RDF, OWL
- Introduction to Ontology design/development, semantic annotation (metadata extraction) and reasoning

Second Phase: indepth

- Techniques for ontology design and extraction/annotation
- Hands for one or two of these
- Review of representative projects/tools, current applications

Third phase: State of the art and research

- Selected paper presentations and discussions
- Project discussions

Office Hours:

Tuesdays and Thursdays: 1:30 to 2pm and 3:30 to 4:30pm