ece 627

intelligent web: ontology and beyond

course outline

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syllabus

this course focuses on aspects of representation and processing of knowledge, and its application to emerging concepts of future web and networking

syllabus

the course provides an introduction and fundamental knowledge in:

- basic logic (with emphasis on the description logic)
- RDF and ontology as a new approach to knowledge representation
- alternative knowledge representations of data on the web
- web data utilization

syllabus

the course also provides an introduction to new concepts and paradigms:

- semantic web
- folksonomy/tagging
- linked data
- RDF query language – SPARQL

teaching method

- **lectures**
  … are compulsory
  … cover core material
- **reading material**
  … time to time: given and suggested

assessment

- **exams**
  … two quizzes – 30% (15% each)
  … final – 30%

- **projects**
  … paper critique – 10%
  … ontology development and reasoner utilization – 30%

assessment

- **exams**
  … quiz #1: Wed, Feb 13th, 11am
  … quiz #2: Wed, Mar 20th, 11am

  … final – **Friday, April 19, at 9am**

assessment

- **projects**
  … paper critique (1-2 pages)
  – Friday, Mar 29th, 11pm

  … ontology development and reasoner utilization
  – Friday, April 12th, 11pm

course objectives

to help you understand changes in the web, and expose you to new forms of knowledge representation and their utilization

- to understand basics of description logic
- to construct ontology in variety of domains of interest
- to know basic approaches to ontology maintenance and integration

course objectives

- to be familiar with
  - semantic web
  - folksonomy/tagging
  - linked data
- to know how to utilize web data
- to understand a need for intelligence in the future web

lecture topics guide

- **ontology**
  - introduction to ontology – a bit of history
  - ontology languages (RDF, OWL)
  - ontology 101
  - *Protégé* (ontology development tool)
  - development, integration, maintenance

lecture topics guide

- **logic**
  - from propositional logic to predicate logic (a very short introduction)
  - description logic

lecture topics guide

- **rules and reasoning**
  - Semantic Web Rule Language (SWRL)
  - ontology reasoners

lecture topics guide

- **folksonomy**
  - tagging (collaborative, social)
  - informal social categorization
  - construction of folksonomy
  - integrating folksonomy with Semantic Web

lecture topics guide

- **linked data**
  - advanced topics related to triples: URIs, different representation formats
  - querying linked data

welcome

sit comfortably, relax and enjoy!!!

any questions?