

CMPSCI 791SS

Computational Social Science

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Computational Social Science

CS + statistics + social sciences

- Goal: develop quantitative methods & computational tools to address social science problems and questions
- Driven by new sources of data from the internet, government databases, voting records, libraries, etc.
- ... as well as advances in statistics, machine learning, social networks, and natural language processing

Course Description

- Goal: an overview of computational social science
 - Emerging discipline; not (yet!) well-defined
- We will explore 2 axes:
 - Real-world problems from the social sciences: political science, sociology, economics, public policy...
 - Quantitative methods and tools: statistics, social network analysis, natural language processing

General Information

- Class: Wed 12-2pm, LGRC A311
- 1-3 papers per week:
 - Some introductory, some cutting-edge research
 - Presented in class by students
 - Discussion-based, interactive, participatory
- Occasional invited guest speakers
- No scheduled office hours; appointments by email

Assessment

- Paper reviews (40/80):
 - At most 1 page per review
 - 1-2 paragraph summary, with pros/cons of approach
 - Detailed comments (questions, comments, thoughts)
 - Due (via email; plain text) 11:59pm on Tues
- In-class participation (10/20):
 - Paper presentations
 - Participation in class discussions

Assessment (cont.)

- Semester-long project (50/NA):
 - Student-proposed (but must be approved by me): e.g., tackling an existing problem using novel methods, comparing tools/methods for a new problem, ...
 - Proposal (1 page) due 11:59pm Feb 08
 - Status update (1 paragraph) due 11:59pm Mar 15
 - Write-up (max. 10 pages) due 11:59pm Apr 19
 - In-class presentations (~10 mins) on Apr 27

Website and Course Materials

- Schedule for the semester is on the class website:
 - <http://www.cs.umass.edu/~wallach/courses/cs791ss/>
- Papers will be posted online (where possible)
- Links to additional materials (blog posts, workshops, mailing lists, talks, etc.) will also be posted
- Scheduling the presenter for each week will be coordinated via the class mailing list

Background and Introductions...

- Useful background:
 - Probability and statistics, especially Bayesian methods
 - Social network analysis and graph theory
 - Text analysis methods, especially statistical topic models
 - Machine learning, especially graphical models
 - One or more social science ...
- Who are you? What's *your* background?

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