DH-500

Computational Social Media

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Cursus	Sem.	Type
Digital Humanities	MA2, MA4	Obl.
Digital Humanities		Opt.
Electrical Engineering		Opt.
Learning Sciences		Obl.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	**3 weekly**
Lecture	2 weekly
Practical work	1 weekly
Number of positions	

Summary

The course integrates concepts from media studies, machine learning, multimedia and network science to characterize social practices and analyze content in sites like Facebook, Twitter and YouTube. Students will learn computational methods to infer individual and networked phenomena in social media.

Content

The course will present a human-centered view of computational social media. It uses a multidisciplinary approach and integrates concepts from media studies, multimedia information systems, machine learning, and network science to present the socio-technical fundamentals needed to understand the motivations, characterize the behavior, and analyze the content and relations of social media users and communities in sites like Twitter, Facebook, and YouTube. Students will become familiar with computational approaches for classification, discovery, and interpretation of phenomena in social media.
The content is organized around trends in social media, introducing computational models of general applicability.
1. Introduction. A brief history of social media. Networked individualism.
2. Friending. A human-centered review of Facebook research. Users, communities, and networks. The real-name web.
3. Tweeting. From random chatter to worldwide pulse. Followers, hashtags, events, and network effects. Analyzing real-life phenomena on Twitter. Misinformation in social media.
4. Shooting. Photo sharing and tagging. Media, user and community analysis enabled by photo sharing. Ephemeral social media.
5. Moving. Location-based social networks. Individual and network phenomena revealed by mobility data. Urban computing.
6. Watching. YouTube as a media phenomenon. Multimedia techniques (audio,video,text) to analyze social video.
7. Crowdsourcing. Models to analyze crowdsourced tasks and workers. Uses of crowdsourcing in social media research. Crowdsourcing and social participation.
8. Society. Privacy and social media. Effects of social media on society.

Keywords

Social Media, Social Networks, Multimedia, Machine Learning.

Learning Prerequisites

Required courses

Students from other disciplines can talk to the instructor during the first lecture of the course.

Recommended courses

Applied Data Analysis
Machine Learning for Digital Humanities

Learning Outcomes

By the end of the course, the student must be able to:

- Apply socio-technical fundamentals to understand motivations, characterize behavior, and analyze content of social media users and communities

Transversal skills

- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Assess progress against the plan, and adapt the plan as appropriate.
- Evaluate one's own performance in the team, receive and respond appropriately to feedback.
- Take account of the social and human dimensions of the engineering profession.
- Manage priorities.
- Write a scientific or technical report.

Teaching methods

Lectures
Paper presentations
Group discussions
Project design, development, and implementation

Expected student activities

Homeworks
Paper presentations
Group discussions
Group project

Assessment methods

Multiple methods during the semester: homeworks; paper presentation and discussion, and group project.

Supervision

Office hours	Yes
Assistants	Yes
Forum	No

Resources

Websites

- https://people.epfl.ch/daniel.gatica-perez?lang=en&cvlang=en