

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		Opt.
Managmt, tech et entr.	MA2, MA4	Opt.

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

**Summary**

The course integrates concepts from media studies, machine learning, multimedia, and network science to characterize social practices and analyze content in platforms like Facebook, Twitter, and YouTube. Students will learn computational methods to understand 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 user motivations and behavior, and analyze content in platforms like Twitter, Facebook, Instagram, 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. Privacy and 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.** Social media from a global perspective. 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.
- Give feedback (critique) in an appropriate fashion.
- Respect relevant legal guidelines and ethical codes for the profession.
- Make an oral presentation.
- Summarize an article or a technical report.
- Demonstrate a capacity for creativity.
- Demonstrate the capacity for critical thinking
- 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>

**Moodle Link**

- <https://go.epfl.ch/DH-500>