

EE-727

Computational Social Media

Gatica-Perez Daniel

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

Language of teaching	English
Credits	4
Withdrawal Session	Unauthorized Summer
Semester	Spring
Exam	Multiple
Workload	120h
Weeks	14
Hours	3 weekly
Courses	2 weekly
TP	1 weekly
Number of positions	30

It is not allowed to withdraw from this subject after the registration deadline.

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**SCHEDULE**

ROOM: **ELG120**. On Friday (22.02 to 31.05) from 10:15 to 13:00

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, Flickr, YouTube, and Foursquare. Students will become familiar with computational approaches for classification, discovery, and prediction of individual and networked phenomena in social media.

The content is organized around trends in social media, introducing computational models of general applicability.

- 1. Introduction.** Basic theories about social media usage and participation. 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, topics, events, and network effects. Analyzing phenomena on Twitter.
- 4. Shooting.** Photo sharing and tagging in Flickr, Pinterest, and Instagram. Media, user and community analysis enabled by photo sharing.
- 5. Watching.** YouTube as a media phenomenon. Video blogging. Multimedia techniques (audio, video, text) to analyze social video.
- 6. Moving.** Location-based social networks and smartphone data. Individual and network phenomena revealed by mobility data. Urban computing.
- 7. Crowdsourcing.** Models to analyze crowdsourced tasks and workers. Uses of crowdsourcing in social media research. Crowdsourcing and social participation.
- 8. Protecting.** Privacy and social media. Approaches for privacy preservation in social media. Limitations of existing methods. Ephemeral social media
- 9. Burning out.** Effects of social media usage on cognition, attention, and social norms.

Keywords

Social Media, Social Networks, Multimedia, Machine Learning.

Learning Prerequisites

Required courses

Beginning PhD level in Electrical Engineering or Computer Science. Students from other disciplines (e.g. geography and sociology) can talk to the instructor during the first lecture of the course.

Assessment methods

Multiple.

Resources

Websites

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