

## Fachbereich 9 - Medienstudiengänge

Department 9 - Media Courses

### Kommentar zur Lehrveranstaltung im SoSe 2022

Description of seminars

**Veranstalter\*in:** Prof. Dr. Cornelius Puschmann

*Lecturer:*

**Titel (dt.):** Applying Computational Methods

**Titel (engl.):** Applying Computational Methods

(immer  
angeben)

#### **Beschreibung:**

*Description:*

Across global publics, social media platforms play an increasingly important role in politics, business, culture and academia. Services such as Facebook, Twitter, Telegram, TikTok and Instagram are used for a diverse set of purposes by a wide range of actors, from government entities and political activists to celebrities and public intellectuals. They also play a controversial role for public debate, having both been framed as instruments of democratization and openness and as dangerous, polarizing and pervaded by misinformation and extremism. What is largely undisputed however is that social media represent a vital data source for the study of politics, culture and society at large, and are therefore of growing relevance to empirical social science.

This class focuses on how the types of questions that are relevant to communication science may be approached using digital data from social media platforms in combination with innovative computational methods for content analysis ("big data" research). The platforms used as examples include Twitter and Instagram, and the techniques covered will include argumentation mining, topic modeling and supervised machine learning. The course will follow a hands-on approach, with short theoretical sessions followed by coding challenges where participants will need to apply new methods.

The first segment of the class will cover research design issues and the choice of appropriate methods and data, as well as practical considerations related to data acquisition, preprocessing and classification. Participants will be introduced to the `quanteda` package for R, which represents a useful framework for the analysis of textual data. They will also learn the basics of retrieving data through the Twitter API using Twitter Academic Track, and scraping Instagram data using Python. The second segment will introduce participants to argumentation mining, topic modeling and/or supervised machine learning for classifying textual content. Datasets and example applications with R will be provided to participants. In the third part of the class participants will apply a set of techniques that we have studied to a dataset of their choice.

The course assumes both working familiarity with R and a strong background in quantitative research methods.

For successful participation participants must complete three homework assignments with R. There is also the option of writing a methodologically focused term paper (in the form of an RStudio-Notebook) for extra credit.

#### **Literatur:**

*Literature:*

Salganik, M. (2017). *Bit by bit: Social research in the digital age*. Princeton University Press.  
Engel, U. et al (2022). *Handbook of Computational Social Science*. Routledge.