



Course and Examination Fact Sheet: Spring Semester 2023

4,728: Technologien/Technologies: No Snake Oil, No Magic? An Introduction to Critical Data Studies

ECTS credits: 3

Overview examination/s

(binding regulations see below)

Decentral - Presentation (in groups - all given the same grades) (40%)

Examination time: term time

Decentral - examination paper written at home (individual) (60%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[4,728.1.00 Technologien/Technologies: No Snake Oil, No Magic? An Introduction to Critical Data Studies](#) -- Englisch -- [Pidoux Jessica](#), [Ebert Isabel Laura](#)

Course information

Course prerequisites

- Interest in participatory methodologies to reflect on the societal impact of technologies for identifying connected problems and potential solutions is desired.
- Basic notions of qualitative or/and quantitative methods applied to the social and human sciences' objects of study.

Learning objectives

After the successful completion of the course students

- understand core concepts of SHS as they relate to digital technologies and internet governance
- have acquired data literacy and are able to carry out collaborative work on data
- are able to grasp the challenges in computational methods and in critical analysis of computational practices.

Course content

The "Critical Data Studies" class seeks to highlight the methodological challenges as well as the biases that can arise from the study of data and technological artifacts that rely on them, considered, a priori, as "objective" and natural.

During the **first** part, students become familiar with data recovery methods and tools allowing the processing, analysis, and sharing of data while reflecting on works from the contemporary field of "critical data studies" which relate to "the cultural, ethical and critical challenges posed by big data" (Iliadis and Russo 2016).

The **second** part of the class, organized around case studies like Uber, Tinder and Twitter, will retrace the data workflow as it appears in our contemporary technological interface (acquisition, transformation, modeling, visualization, etc.), in order to question each of these stages within the data economy throughout personal data.

The readings and lectures will aim to answer the following questions:

- Why is developing a critical approach to data important?
- How are built data workflows and infrastructures, and why we should pay attention to this?
- What are the societal impacts of data structures and collection?
- How can one become an ethical and critical observer of data usages?

Course structure and indications of the learning and teaching design



Work on data is necessarily interdisciplinary and crosses several methods. Our objective is therefore to allow everyone to acquire data literacy through a multi-disciplinary approach drawing from concepts and methods from the social and human sciences (SHS) to assess contemporary technological systems and it will provide the necessary introductory knowledge for data analysis. Students will learn to understand the underlying governance framework of digital technologies, and be able to grasp the challenges in computational methods and in critical analysis of computational practices to carry out collaborative work.

Unit 1: What is at stake?

- Internet governance and data controversies
- Data and Biases
- Human Rights

Unit 2: What is data ?

- Data access rights
- Data in context
- The attention economy

Unit 3 Models

- The ground truth issue
- Data Visualization
- Data governance models

Unit 4 Preserving values in business practice

- Ethics- and Human Rights based solutions
- Technological solutions

Contextual Studies are considered part of **Contact Learning**; thus, taking part properly implies **regular attendance**. It is the students' own responsibility to ensure that there is **no timetable clash** between the courses they have chosen. A detailed course outline and all relevant documents will be made available on **Studynet**. Only the current timetable as published on **Stundenplan online** does apply.

Course literature

- Boyd, danah, and Kate Crawford. "Critical questions for Big Data : Provocations for a Cultural, Technological, and Scholarly Phenomenon." *Information, Communication & Society* 15, no. 5 (June 2012): 662-79. <https://doi.org/10.1080/1369118X.2012.678878> .
- Bowyer, Alex; Pidoux, Jessica; Gursky, Jacob; Dehaye, Paul-Olivier, Digipower Technical Reports: Auditing the Data Economy through Personal Data Access <https://zenodo.org/record/6554178>
- Barocas, Solon, and Danah Boyd. 2017. "Engaging the Ethics of Data Science in Practice." *Communications of the ACM* 60 (11): 23-25. <https://doi.org/10.1145/3144172> .
- Benjamin, Ruha. 2019. *Race After Technology: Abolitionist Tools for the New Jim Code* Cambridge, England; Polity Press. Crawford, Kate, *Atlas of AI: Power, politics and Planetary Cost of Artificial Intelligence*, 2021, New Haven and London: Yale University Press.
- Burrell, Jenna, 2016, "How the Machine 'Thinks': Understanding Opacity in Machine Learning Algorithms". *Big Data & Society* 3, no 1: 1-12. <https://doi.org/10.1177/2053951715622512>.
- D'Ignazio, Catherine, et Lauren F. Klein. *Data Feminism*. The MIT Press, 2020. <https://doi.org/10.7551/mitpress/11805.001.0001>.
- Ebert, Busch Wettstein (2020): *Business & Human Rights in the Data Economy*, German Institute for Human Rights https://www.institut-fuer-menschenrechte.de/fileadmin/user_upload/Publikationen/ANALYSE/Analysis_Business_and_Human_Rights_in_the_Data_Economy.pdf
- Iliadis, Andrew, and Federica Russo. "Critical Data Studies: An Introduction." *Big Data & Society* 3, no. 2 (December 1, 2016): 2053951716674238. <https://doi.org/10.1177/2053951716674238> .
- D'Ignazio, Catherine, and Lauren F Klein. 2020. *Data Feminism*. Cambridge, MA: MIT Press. Stodden, V. (2013). *What the Reinhart & Rogoff Debacle Really Shows: Verifying Empirical Results Needs to be Routine*.
- OHCHR B-Tech (2020): *The UN Guiding Principles in the Age of Technology* <https://www.ohchr.org/sites/default/files/Documents/Issues/Business/B-Tech/introduction-ungp-age-technology.pdf>
- Pasquale, F. (2015). *The black box society*. Cambridge, MA, Harvard University Press.
- Pidoux, Jessica (2022) *A comparative study of algorithmic-user classification practices in online dating: a human-machine learning process*, *Porn Studies*, DOI: 10.1080/23268743.2022.2104352
- Pidoux, Jessica; Gursky, Jacob; Bowyer, Alex; Dehaye, Paul-Olivier, *Digipower Technical Reports: Understanding Influence and Power in the Data Economy* <https://zenodo.org/record/6554156>



Videos to watch:

- Understanding the transversality of matching systems and side channels <https://www.youtube.com/watch?v=ENQ8mdYPMj8>
- TinVec explanation by Tinder's Chief Scientist at Machine Learning Conference: <https://youtu.be/j2rfLFYYdfM>

Additional course information

Dr Isabel **Ebert** is a Senior Research Fellow at the Institute of Business Ethics, University of St. Gallen, Harvard Kennedy School of Government Tech and Human Rights Fellow 2022/23, and adviser to the United Nations on technology and human rights. Her teaching and research interest focuses on the intersection of human rights and technology, responsible business conduct and internet governance.

Dr Jessica **Pidoux** is a sociologist and holds a PhD in Digital Humanities from the EPFL. Her research focuses on the design and usage of matching algorithmic systems in online dating. She is currently a postdoctoral researcher in citizen science at CEE, Sciences Po Paris, and director of the Swiss non-profit association PersonalData.IO where she builds with civil society participative methods for data governance.

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Decentral - Presentation (in groups - all given the same grades) (40%)

Examination time: term time

Remark

Presentation of research project

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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Nature of examination

analog

Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - examination paper written at home (individual) (60%)

Examination time: term time

Remark

Essay on research project

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.



Supplementary aids

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Nature of examination

analog

Examination languages

Question language: English

Answer language: English

Examination content

Students will be required to **conduct and present a short research project in groups**, which articulates the key takeaway and methods seen in from the class i.e. a data analysis based on the recovered data from one platform of your choice (e.g. Uber, Tinder, Twitter). **40%**

The **term paper** needs **5000-7500 words**, excl. title page and references. It will be evaluated by the issues addressed, the concepts used and the critical analysis made after doing the data analysis. **60%**

Examination relevant literature

See course literature.

Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 12 are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 26 January 2023);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 20 March 2023);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 12 (Monday, 20 March 2023);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the de-registration period in CW 15 (Monday, 10 April 2023).