



MA Political Ideas in a Digital Age

Syllabus
M2
2023-2024

MA Political Ideas in a Digital Age M2s3

Digital Twin, a new era to think and do (2h x 3 weeks)

Dr. Lionel Lavarec

MICA Bordeaux (Sciences of Information and Communication) & Dassault Systèmes
(Communication Strategy manager)

How to develop a vaccine in 10 months instead of 8 years? How to shape and produce an electrical car and its network at the same time? How to gather owners, architects, constructors to ensure the right completion of a building? The answer is not coming from social media, nor office suite.

Digital arrived in the world of work not only through computers and Internet, but also with new ways to exchange together around a common element. From 3D models to Product Lifecycle Management, with digital mockup in the middle, digital is a new thing to link different kind of people, let them express their own standpoints and find a collective solution to complex issues. Plane, car, boat, laptop, smartphone or building are using the same way to arise faster but also better and for the benefit of all (including the planet).

The last (but not least) aspect of digital at work is named digital twin. It's a huge transformation for companies but also for scientists, researchers, decision-makers, citizen... Because they are not only a way to imagine and manufacture new goods but also to run the entire thinking and collaborative aspects, digital twins are the new standard to better understand life sciences & healthcare for humans' personalized treatments, to better leverage urban needs and interact with citizen, to better manage sustainability for every mobility systems.

This new era to think and do is not science fiction. It's already on-going. It's not an artificial intelligence thing but an organization of several individuals that can gather their skills for a common goal. And it's very different than mass collaboration or crowdsourcing. Putting people together, even with conversational or community tools, isn't enough. That's why communication is key, how you represent a whole of information as something that does not yet exist and has to be created, how you exchange between several culture, several countries, several persons.

Digital Twins can change everything. This course will not present them as a technical aspect but as a collective human way to address complex issues. We will go through Manufacturing, Life sciences and Territories domains: where digital twins come from, how they are effectively used and their current boundaries.

Literature

Books:

BENKLER, Yochai. *The Wealth of Networks, how social production transforms markets and freedom*. New Haven: Yale University Press, 2006, 515 p.

CHESBROUGH, Henry. *From open science to open innovation*. Science Business Publishing, 2015. 15 p.

LAWSON, Bryan. *How Designers Think, The Design Process Demystified*. Burlington: Architectural Press, 2005, 322p.

- FOLLETT, Mary Parker. *Creative Experience*. United States: Longmans, Green & Co, 1924. Reprinted in 1930. 303 p.
- KAHNEMAN, Daniel. *Thinking fast and slow*. London: Pinguin, 2012. 512 p.
- LATOURE, Bruno. *Science in Action. How to follow scientists and engineers through society*. Cambridge: Harvard University Press, 1987. 274p.
- MCKIM, Robert H. *Thinking visually, a strategy manual for problem solving*. Belmont, C.A.: Lifetime Learning Publications, 1980. 210 p.
- RIES, Eric. *The lean startup, how today's entrepreneurs use continuous innovation to create radically successful businesses*. New York: Crown Business, 2011, 320 p.
- SIMON, Herbert Alexander. *The Science of The Artificial*. 3rd edition. Cambridge: MIT Press, 1996. 231 p.
- TAPSCOTT, Don and WILLIAMS D., Anthony. *Wikinomics, How Mass Collaboration Changes Everything*. New York: Penguin Group, 2006. 314 p.
- WOMACK, James P. and JONES, Daniel T. *Lean Thinking, banish waste and create wealth in your corporation*. New York: Free Press, 2003, 396 p.
- WURMAN, Richard Saul. *Information Architects*. First Editions, Graphis Inc. 1997. 235p.

Papers:

- BAUWENS, Michel. *The emergence of open design and open manufacturing*. Consulted in 2010 we_magazine on June, 28 2017: <http://www.we-magazine.net/we-volume-02/the-emergence-of-open-design-and-open-manufacturing/#.WGqDhESmlp8>
- BROWN, Tim. *Design Thinking*. Harvard Business Review. Consulted on June 2008: <https://hbr.org/2008/06/design-thinking>
- HOWE, Jeff. *The rise of crowdsourcing*. Consulted in Wired June 2006, on February, 24 2016: <https://www.wired.com/2006/06/crowds/>

**MA Political Ideas in a Digital Age
M2s3**

Liberal Democracies and the Challenge of the Digital Age

Prof. Catherine Marshall

Course description:

Western Liberal Democracies are undergoing major changes under the impact of the digital age, to the extent that some thinkers consider that they are being affected by a “fourth revolution” and that humanity has entered an “information age” which might transform it completely (after the hunter/gatherers of the first ages; the agricultural age and the industrial age).

The past few years, mostly since the economic crisis of 2008 and especially after 2016, have shown how democratic systems have been affected by the new challenges related to the digital transformations. From surveillance capitalism, “techno feudalism”, the problems posed by algorithmic governance, AI ethics, deep fakes, fake news, online viral conspiracy theories, to the addictive aspects of the digital technology, this new age is forcing liberal democracies to find solutions to a number of questions which are making former marginal movements (populism, radicalisations, extremes) much more powerful than before.

Yet, the digital age has also lowered communication expenses, promoting connectedness and the sharing of ideas, and has brought on new possibilities (smart cities, answers to the climate challenge, smart video games, health improvements) which could contribute to a better world. This course will approach the theme of “Liberal Democracies and the Challenge of the Digital Age” through the idea that if a “fourth revolution” is really taking place, we need to understand it for its positive and negative aspects and to try and to make sense of the changes that are still in the making.

Each week – for 12 weeks - students will have a 3-hour session tackling a key theme of research on the subject. The aim is to introduce students both to classic theories (some that they have already studied in the History of Political Ideas seminar in M1s1) and also the latest ideas in the field of research.

Students will leave with both a wide-ranging grounding in political history and insight into how the digital age is changing the political landscape.

Learning Objectives:

This seminar aims to give students the ability to cast a critical eye on politics in the digital age. By the end of the semester, students should have acquired: an appreciation of classic political theories on liberal democracies and how they are challenged/improved by the information age; an understanding of how the digital age is transforming politics, policy-making, ethics and even humanity’s future; an awareness of the latest research available and should have improved their critical writing and debating skills through in-class debates, presentations, plus formative and summative assignments.

Assessment:

The course evaluation will be based on:

- 1/ Each student will be given the task of being the ‘discussion leader’ of one session (1h15mn to prepare and coordinate) (30%) and will write the 2-page report of the session sent to all the students (15%)
- 2/ Active presence and participation (20%)
- 3/ In class 3h test on one the topics (a choice of two subjects) (35%)

Other useful links and online courses to consult:

- Philosophy bites: <https://philosophybites.com/>
- Talking Politics: <https://www.talkingpoliticspodcast.com/>
- The Full Fact Podcast: <https://podcasts.apple.com/gb/podcast/the-full-fact-podcast/id982034451>

Week by week programme:

12/09 Introduction

How to work? The Socratic discussion format and the role of the Discussion leader.

19/09 The Digital Age: The Fourth Stage of Human Society? (chaired by CM)

-Session 1: James Dale Davidson and William Rees-Mogg, *The Sovereign Individual* (1997)

Further resources to help you:

Podcast: “The Coming Storm”, Episode 8, Epilogue: “The Sovereign Individual”, <https://www.bbc.co.uk/programmes/m001324r/episodes/downloads>

Podcast, <https://philosophybites.com/2009/06/luciano-floridi-on-the-fourth-revolution.html>

Podcast: “What You Will Learn”, Episode “The Sovereign Individual”

<https://shows.acast.com/what-you-will-learn/episodes/the-sovereign-individual>

Video: <https://www.youtube.com/watch?v=xjPSx3LHIgM> to explain the book as a prophecy

-Session 2: Jamie Susskind, “Introduction” in: *Future Politics* (2018), pp. 1-21.

Further resources to help you:

Bernard Stiegler, *The Age of Disruption, Technology and Madness in Computational Capitalism* (2016), pp. 3-15.

Video/podcast: Slavoj Zizek, “Living in the End Times”, <https://www.youtube.com/watch?v=ShJiiMqEsgA>

26/09 Surveillance Capitalism and techno-feudalism (chaired by CM)

-Session 1: Podcast/video: Yanis Varoufakis, “Technofeudalism and Cloud Capital”, April 2022, <https://www.yanisvaroufakis.eu/2022/07/12/technofeudalism-and-cloud-capital-a-conversation-hosted-by-stanford-in-government/>

Further resources to help you:

Yanis Varoufakis, “Can the Internet democratise capitalism?”, <https://www.yanisvaroufakis.eu/2014/02/21/can-the-internet-democratise-capitalism>

Can we Fix Capitalism? Yanis Varoufakis vs Gillian Tett: <https://www.youtube.com/watch?v=Gv6130kSzEY>

-Session 2: Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (2019), chapter 18 “A Coup from Above”, pp. 495-525.

Further resources to help you:

Shoshana Zuboff on surveillance capitalism | VPRO Documentary <https://www.youtube.com/watch?v=hIXhnWUmMvw>

3/10 Algorithmic Governance & Digital Authoritarianism

-Session 1: Eduardo Nolla “Educating prince Algorithm” (2018) translated and published as « Éduquer le prince algorithme », *Revue Française d'Histoire des Idées Politiques*, vol. 53, no. 1, 2021 : 225-240.

Further resources to help you:

H. Akin Ünver, Artificial Intelligence, Authoritarianism and the Future of Political Systems, Centre for Economics and Foreign Policy Studies, 2018.

-Session 2: Alina Polyakova and Chris Meserole, “Exporting digital authoritarianism: The Russian and Chinese models”, 2019, <https://www.brookings.edu/research/exporting-digital-authoritarianism/>

Further resources to help you:

Matthew B. Crawford, “Governance and Political Legitimacy”, *American Affairs*, 2019, <https://americanaffairsjournal.org/2019/05/algorithmic-governance-and-political-legitimacy/>

10/10 Artificial intelligence, work and ethics

-Session 1: Video/Podcast "A world without work: technology, automation and how we should respond" with Daniel Susskind, <https://www.youtube.com/watch?v=thZzDi5XRVs>

-Session 2: Hasselberger, William. "Ethics beyond Computation: Why We Can't (and Shouldn't) Replace Human Moral Judgment with Algorithms." *Social Research: An International Quarterly* 86, no. 4 (2019): 977-999.

Further resources to help you:

Article: Tajalli, P. AI ethics and the banality of evil. *Ethics Inf Technol* 23, 447–454 (2021). <https://doi-org.bibdocs.u-cergy.fr/10.1007/s10676-021-09587x>

Podcast: <https://philosophybites.com/2022/07/peter-railton-on-ai-and-ethics.html>

Article: Nath, R., Sahu, V. The problem of machine ethics in artificial intelligence. *AI & Soc* 35, 103–111 (2020). <https://doi.org/10.1007/s00146-017-0768-6>

Book: Michael Sandel, *The Case against Perfection: Ethics in the Age of Genetic Engineering* (2009)

Video/podcast: The Oxford Uehiro Centre for Practical Ethics lectures 2022, Lectures 1 and 2, <https://www.practicaethics.ox.ac.uk/uehiro-lectures-2022>

Arnold, T., Scheutz, M. The “big red button” is too late: an alternative model for the ethical evaluation of AI systems. *Ethics Inf Technol* 20, (2018): 59-69. <https://doi-org.bibdocs.u-cergy.fr/10.1007/s10676-018-9447-7>

17/10 The Cognitive and Behavioral effects of the Digital Age

-Session 1: Nicholas Carr, *What the Internet is doing to our Brains* (2010), “Afterword to the second edition” (2020), 225-238.

Further resources to help you:

Alarming Shallow: The effects of Internet on our culture, community, and social well being: A review of Nicholas Carr's *The Shallows*. <https://doi.org/10.1145/2631518.2635804> / <https://elearnmag.acm.org/archive.cfm?aid=2635804&doi=10.1145%2F2631518.2635804>

Video:Podcast: Nicholas Carr discusses his book in this interview <https://www.hitendra.com/podcast/what-the-internet-is-doing-to-our-brains>

-Session 2: Adam Alter, *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked* (2017), chap. 1: The Rise of Behavioral Addiction, pp.13-45.

Further resources to help you:

Book: Jaron Lanier, *Ten Arguments for Deleting Your Social Media Accounts Right Now* (2019)

Video: How the modern world makes us crazy? https://www.youtube.com/watch?v=yO0v_JqxFmQ

7/11 Deep Fakes and Disinformation

-Session 1: Podcast: (Episode 1: 57mn): Deep fakes and disinformation: The future will be synthesized: <https://www.bbc.co.uk/programmes/m00181mt>

-Session 2: Podcast: (Episodes 2-6, each 14mn): Deep fakes and disinformation: The future will be synthesized: <https://www.bbc.co.uk/programmes/m0017cgr/episodes/player>

Further resources to help you:

Deep Fakes: The Full Fact Podcast:

https://www.youtube.com/playlist?list=PLTDX8LZCsP8BYh_i7vhRmmxgtcxMJ-KA6

Book: Nina Schick, *Deep Fakes and the Infocalypse: What You Urgently Need to Know* (2020)

Podcast with Nina Schick: <https://www.wilmerhale.com/en/insights/blogs/in-the-public-interest/20210330-deepfakes-and-disinformation-the-world-of-manipulated-media>

Philosophy Bites: <https://philosophybites.com/2022/05/ro-khanna-on-digital-dignity.html>

Video: Deep Fake Love | Netflix Official Site (What is Deep Fake Love Netflix?)

Helmus, Todd C., “Artificial Intelligence, Deepfakes, and Disinformation: A Primer”. Santa Monica, CA: RAND Corporation, 2022,

<https://www.rand.org/pubs/perspectives/PEA1043-1.html>.

14/11 Videology, Gamification, and conspiracy theories

-Session 1: Adam Alter, *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked* (2017), chapter 12 “Gamification” and “Epilogue”, 293-320.

-Session 2: Luke O’Sullivan, “A Critique of Videology Games and the Digital Transformation of the Public Sphere” (2016).

For both sessions: read the short article: Moskalenko, Sophia, and Clark McCauley. “QAnon: Radical Opinion versus Radical Action.” *Perspectives on Terrorism*, vol. 15, no. 2, 2021, pp. 142–46.

<https://www.jstor.org/stable/27007300>.

Further resources to help you:

-Podcast: The Psychology of Conspiracies: The Full Fact Podcast | Episode 6, https://www.youtube.com/watch?v=5ypuD0WycZg&list=PLTDX8LZCsP8BYh_i7vhRmmxgtcxMJ-KA6&index=6

-Podcast: Picking Apart Conspiracy Theories – Tim Tangherlini: <https://www.parsingscience.org/2020/08/18/tim-tangherlini/>

-Article: Mattia Thibault, “Trolls, hackers, anons: Conspiracy theories in the peripheries of the web” (2016)

- Podcast: Make Digital-First, <https://podcasts.apple.com/fr/podcast/make-digital-first/id1139174209?i=1000494696908>
- Podcast: the Coming Storm: <https://www.bbc.co.uk/programmes/m001324r/episodes/player>
- Podcast: <https://philosophybites.com/2015/05/quassim-cassam-on-conspiracy-theories.html>
- Article: Baele, Stephane J., Lewys Brace, and Travis G. Coan. "Variations on a Theme? Comparing 4chan, 8kun, and Other Chans' Far-Right 'Pol' Boards." *Perspectives on Terrorism* 15, no. 1 (2021): 65–80. <https://www.jstor.org/stable/26984798>.
- Article: Schlegel, Linda. "Connecting, Competing, and Trolling: 'User Types' in Digital Gamified Radicalization Processes." *Perspectives on Terrorism*, vol. 15, no. 4, 2021, 54–64. <https://www.jstor.org/stable/27044235>
- Article: <https://www.washingtonpost.com/technology/2018/11/12/how-suffragist-character-red-dead-redemption-became-viral-punching-bag-misogynists>

21/11 Sustainability in the Digital Age

- Session 1:** Chantal Mouffe, *A left Populist Strategy for a Green Democratic Revolution* (paper given in Liège in 2022 – not to be transferred please: only for our use).
- Session 2:** Rebecca Willis (et all), *Deliberative democracy and the climate crisis*, Wiley Interdisciplinary Reviews: Climate Change, 13(2), e759, 2022.

Further resources to help you:

Sustainability in the Digital Age, Future Earth, and ClimateWorks Foundation. 2022. Dynamic Philanthropy - A Framework for Supporting Transformative Climate Governance in the Digital Age. <https://doi.org/10.5281/zenodo.5764443> or at: <https://futureearth.org/initiatives/other-initiatives/sustainability-in-the-digital-age/>

Podcast: Learning how to cope with 'climate doom', <https://www.theguardian.com/science/audio/2022/jul/26/learning-how-to-cope-with-climate-doom-podcast>

Podcast, The climate tipping points, BBC, June 2022, <https://www.bbc.co.uk/programmes/p0cfc9sd>
Report: D²S-Agenda_Future-Earth (March 2020, <https://sustainabilitydigitalage.org/d2s-agenda/#>

28/11 Humanity's future in the Digital Age?

- Session 1:** *Our Posthuman Future: Consequences of the Biotechnology Revolution*, Francis Fukuyama (2003), chapter 6 "Why we should worry", 84-102.
- **Session 2:** David Wallace-Wells, *The Uninhabitable Earth. A Story of the Future* (2019), "Politics of Consumption" & "History after Progress", 184-203.

Further resources to help you:

Podcast, The Future of Smart Cities and Smart Nations <https://radioideaxme.libsyn.com/the-future-of-smart-cities-and-smart-nations>

Podcast, Farming Revolution For The Betterment Of Humanity, <https://podcasts.apple.com/fr/podcast/farming-revolution-for-the-betterment-of-humanity/id1139174209?i=1000536002878>

Video: The biotechnology revolution – delivering a greener and cleaner future
<https://www.manchester.ac.uk/research/beacons/covid-catalysts/biotechnology/the-biotechnology-revolution/>

Video: The Biotech Revolution | World Economic Forum at Davos 2022
https://www.youtube.com/watch?v=9I1lrLx3FcA&ab_channel=WorldEconomicForum

5/12 Digital critical thinking skills and new hopes?

-Session 1: Pedro Domingos, *The Master Algorithm* (2015), chapter 2 “The Master Algorithm”, 23-55.
 Further resource to help you:

video: <https://www.youtube.com/watch?v=B8J4uefCQMc> (Pedro Domingos | Talks at Google)

-Session 2: Nick Bostrom, “The Vulnerable World Hypothesis”, *Global Policy*, Volume 10, Issue 4, Nov. 2019, pp. 455-476.

For both sessions: read the short conclusion: Jamie Susskind, “Post Politics” in: *Future Politics* (2018), 362-366.

Further resources to help you:

Michael Patrick Lynch, “Chapter 9: The Internet of Us” in *The Internet of Us. Knowing More and Understanding Less in the Age of Big Data* (2016), pp. 179-188.

Podcast, The war on pineapple, <https://podcasts.apple.com/fr/podcast/the-war-on-pineapple/id1618471287?i=1000559846927>

Podcast: <https://www.socialsciencespace.com/2016/06/mirca-madianou-on-technology-and-everyday-life/>

Video: OECD “How can we ensure that AI benefits society as a whole?”
<https://www.oecd.org/digital/artificial-intelligence/>

12/12 Exam in 3h in class

1. 12/09 Introduction
2. 19/09 The Digital Age: The Fourth Stage of Human Society? (chaired by CM)
3. 26/09 Surveillance Capitalism and techno-feudalism (chaired by CM)
4. 3/10 Algorithmic Governance & Digital Authoritarianism
5. 10/10 Artificial intelligence and ethics
6. 17/10 The Cognitive and Behavioral effects of the Digital Age
7. 7/11 Deep Fakes and Disinformation
8. 14/11 Videology, Gamification, and conspiracy theories
9. 21/11 Sustainability in the Digital Age
10. 28/11 Humanity’s future in the Digital Age?
11. 5/12 Digital critical thinking skills and new hopes?
12. 12/12 Exam in 3h in class

**MA Political Ideas in a Digital Age
M2s3**

**Current and Future Role of Artificial Intelligence in the Socially Unacceptable Discourse
Analysis: from political debate to onlineradicalization**

Prof. Nistor Grozavu & Dr. Michele Linardi

This course wants to introduce and explore the identification of toxic and harmful content in the online discourse. In this context, a rich literature across Human and Computational Science provides a large spectrum of cases and possible contexts.

We will study and realize that no consensus exists on a unique and formal characterization of socially unacceptable discourse (SUD). Hence, we will discuss and see different use cases, where SUD analysis represents a crucial concern.

Understanding the language characteristic and traits of SUD is at the core of linguistic research, on the other hand, we have witnessed a remarkable effort from ML researchers towards the study of ML/DL models that enable the automatic detection of SUD content. To that respect, we will analyze and treat the notion and the fundamentals of NLP (Natural Language Processing) and AI techniques adopted in recent years for SUD detection. We will also analyze the open challenges and the use of these techniques on different applications.

Syllabus: (ML:= Machine Learning, DL:= Deep Learning, AI:= Artificial Intelligence, NLP:= Natural Language Processing, LLM:= Large Language Models)

Introduction to the Socially Unacceptable Discourse: taxonomy and formalization of communication practices that are deliberately harassing, provocative or insulting, incite to violence or express negative generalizations, stereotypical judgments, obscenities or incivilities.

SUD Analysis: a joint effort between Computational linguistic and Computer Science.

Automatic SUD Detection

Introduction to related ML/DL/NLP techniques

Text data processing: Apply different text processing methods (lemmatization, tokenization, ...) and NLP functions in order to transform text variables in numerical values.

Annotation Schema and Language Feature Learning

Word embedding methods : word2vec, fasttext, BERT, GLOVE

The AI role in the SUD identification and the consequence of real world applications.

Open challenges and implication in the recent future.

Large Language Models (LLM): an overview of the main aspects and state-of-the-art techniques.

Practical case study:

Hate Towards the Political Opponent: Twitter Study in the context of 2020 US Elections

Empirical Approach for Extreme Behavior Identification through Tweets Using Machine Learning. Applied Sciences. 9. 3723. 10.3390/app9183723.

Bibliography:

Sharif, Waqas & Mumtaz, Shahzad & Shafiq, Zubair & Riaz, Omer & Ali, Tenvir & Husnain, Mujtaba & Choi, Gyu Sang. (2019). **An Empirical Approach for Extreme Behavior Identification through Tweets Using Machine Learning**. Applied Sciences. 9. 3723. 10.3390/app9183723.

Hate Towards the Political Opponent: A Twitter Corpus Study of the 2020US Elections on the Basis of Offensive Speech and Stance Detection (<https://aclanthology.org/2021.wassa-1.18>) (Grimminger & Klinger, WASSA 2021)

Sulc, Ajda and Kristina Pahor de Maiti. **“No room for hate: What research about hate speech taught us about collaboration?”** TwinTalks@DH/DHN (2020).

Michèle Finck **Artificial Intelligence tools and online hate speech** CERRETech, Media, Telecom Issue Paper 2019

Vladimir Voronkov and Antonia Marie De Meo **COUNTERING TERRORISM ONLINE WITH ARTIFICIAL INTELLIGENCE** United Nations Interregional Crime and Justice Research Institute (UNICRI), 2021



**MA Political Ideas in a Digital Age
M2s3**

Data Protection and New Digital Tools
Prof. Dimitris Kotsinos

Sessions: 12 X 3 hours

Location: Cergy

Description

This course discusses issues of data privacy in the new digital era dominated by Big Data and Artificial Intelligence (AI). We will start by defining the context in which we are now operating and discuss the understanding of data and data protection, a notion quite strongly regulated, and compare it with the notion of data privacy. We will also discuss the different types of data protection/privacy and how this choice affects the strength of the privatization of the data and we will go through the effect that it might have in the cases where we use data to pay for services offered (e.g., navigation) and the compromises we are willing to make. The course will also cover the discussion on different payment models that can reduce the privacy effect in exchange to services of lesser quality.

Then we will discuss the tools that we use to analyze (big) data and the potential problems arising from their use. We will discuss examples in Data Mining and Machine Learning, where algorithms fail to safeguard the privacy of the users or in general protect the data of the users or where algorithms expose or misuse sensitive data and end up with wrong or unfair decisions. In that aspect, we will visit metrics to measure the fairness of the final results and how this affects the protection of our data; and we will try to understand the transparency of the process and possibly in the future to provide explanations on why an automated decision was made (or not made).

Finally, we will discuss an important modern case that touches the problem of misinformation and its diffusion, especially through social media. We will try to identify, what is public and what is private in the social media sphere, how misinformation is created/appearing and spread and how this affects the formation of opinions of people in various subjects, with an emphasis on political opinions. We will look into algorithms and tools for identifying misinformation and its spread over a social network and discuss ways to combat it.

Course Contents

Part I

1. Introduction to data, data protection and data privacy
2. Data privacy vs. data protection (and GDPR)
3. Different types of data privacy – Algorithms for Data Privacy
4. Data Privacy vs. Data Quality (and using data to pay for services; different models of data usage)
5. Public vs Private data: what if we combine? (Data linking)

Part II

6. Mining large datasets / Linking Information of diverse data sources
7. Fairness in Data (and AI) - I
8. Fairness in Data (and AI) - II
9. Transparency/Accountability in Data (and AI)

Part III

10. Misinformation in social media (AI-based methods and tools for news classification and diffusion) - I
11. Misinformation in social media (AI-based methods and tools for news classification and diffusion) – II
12. Class conclusion / final exam

Literature

- Peter Christen, Thilina Ranbaduge, Rainer Schnell (2020). Linking Sensitive Data: Methods and Techniques for Practical Privacy-Preserving Information Sharing. Springer; 1st ed. 2020 edition (October 18, 2020)
- Torra, V. (2017). Data Privacy: Foundations, New Developments and the Big Data Challenge. Germany: Springer International Publishing.
- Leenes, R. (2017). Data Protection and Privacy: (In)visibilities and Infrastructures. Germany: Springer International Publishing.
- Kennedy, G. (2019). Data Privacy Law: A Practical Guide to the GDPR. United States: R R BOWKER LLC.
- Venkataramanan, N., Shriram, A. (2016). Data Privacy: Principles and Practice. United States: CRC Press.
- Fleming, G. (2021). Responsible Data Science. Wiley; 1st edition (April 23, 2021)