Mod.No. 85-756

Title: **Selected Issues in Digital Innovation, Transformation, and Entrepreneurship: The Ethics of Artificial Intelligence**

Overview

Artificial Intelligence (AI) is increasingly becoming a core part of the digital infrastructure for many firms. More and more organizations have implemented AI-based technologies in a variety of professional contexts, usually to augment or automate their business processes and operations. AI is also increasingly confronting the private spaces in our society, making suggestions for the next buy or recommending which piece of news to consume next. But AI is unlike any other technology that has come before. In comparison with traditional digital technologies, AI today has greater learning capacity, greater autonomy in decision-making and is also more inscrutable than digital technologies of the past. Moreover, as data is available in unprecedented volume and quality, the application contexts of AI, its performance and impact have changed immensely. All the while, increasing volumes of funding are continued to be invested in AI, driving further development of the technology and its application.

This situation asks the question of how AI effects decision-making processes as well as outcomes on an ethical level, spanning accountability, morality, responsibility and other layers of ethical values. For example, who is responsible for what AI algorithms decide or do autonomously? How can we make sure that AI processes and outcomes are fair and beneficial for our society and environment? How can we prevent AI misuse and ensure that the data collected, stored and processed by AI is ethical, secure, and safe?

This seminar will explore the ethics of artificial intelligence. Together, we will examine a variety of foundational as well as technology-specific topics related to the ethical and societal implication of the development and use of AI – such as data governance, fairness, bias, explainability, and accountability - and explore which ethical considerations need to be expected in relation to AJ, how ethics of AI can be approached, and which role managers, developers, users and researchers have to assume to ensure ethical development and use of AI.

Contents

Students can select a topic of their choice from a list of available questions and explore a question related to the ethical implications of AI of their own choosing.
Our seminar will include:

- An introduction to the foundations, essential aspects and specific cases of ethics and algorithms
- Refresher workshops on how to design and write a seminar paper:
    - o How to do a literature review
    - o How to design, structure and write a scientific paper

- Presentations of the student seminar papers
- Presentations and critical discussions of seminal scientific articles on ethics and AI

Exemplary Seminar Topics

Topic 1	Why Ethics matter to AI

	- Technological determinism
	- Social determinism
	- E.g.,
	    o Langdon Winner, "Do Artifacts Have Politics?," Daedalus 109, no. 1 (1980): 121–136.
	    o Gabbrielle Johnson, "Are Algorithms Value-Free? Feminist Theoretical Virtues in Machine Learning," Journal Moral Philosophy, n.d.
	    o Batya Friedman and Helen Nissenbaum, "Bias in Computer Systems," ACM Transactions on Information Systems (TOIS) 14, no. 3 (1996): 330–347.

Topic 2	Foundations: Ethical theories and their applicability to AI
	- Major ethical theories and their (dis)advantages, especially in the context of AI and data analytics - Introduction to the main principles of AI ethics and their interrelation - E.g., Jobin, Anna, Marcello Ienca, and Effy Vayena. "The Global Landscape of AI Ethics Guidelines." Nature Machine Intelligence 1, no. 9 (2019): 389–399
Topic 3	Privacy, Data and Responsibility of AI

	- E.g.
	    o Kirsten Martin, "Breaking the Privacy Paradox: The Value of Privacy and Associated Duty of Firms," Business Ethics Quarterly 30, no. 1 (2020): 65–96.
	    o Ari Ezra Waldman, Privacy as Trust: Information Privacy for an Information Age (Cambridge University Press, 2018).

Topic 4	Fairness and Justice of AI
	- E.g., Hoffmann, A. L. (2017). Beyond distributions and primary goods: Assessing applications of Rawls in information science and technology literature since 1990. Journal of the Association for Information Science and Technology, 68(7), 1601–1618.

Topic 5	Surveillance and Power of AI
	- E.g., Shoshana Zuboff, "Big Other: Surveillance Capitalism and the Prospects of an Information Civilization," Journal of Information Technology 30, no. 1 (2015): 75–89
Topic 6	Discrimination in AI
	- E.g., Barocas, Solon and Barocas, Solon and Selbst, Andrew D., Big Data's Disparate Impact (2016). 104 California Law Review 671 (2016), http://dx.doi.org/10.2139/ssrn.2477899
Topic 7	Accuracy of AI
	- E.g., Rachel Thomas and David Uminsky, "The Problem with Metrics Is a Fundamental Problem for Ai," ArXiv Preprint ArXiv:2002.08512, 2020.
Topic 8	Gamification and Manipulation through AI
	- E.g., o Mary Anne Franks and Ari Ezra Waldman, "Sex, Lies, and Videotape: Deep Fakes and Free Speech Delusions," Md. L. Rev. 78 (2018): 892. o Daniel Susser, Beate Roessler, and Helen Nissenbaum, "Technology, Autonomy, and Manipulation," Internet Policy Review, 8, no. 2 (2019). o Tae Wan Kim and Kevin Werbach, "More than Just a Game: Ethical Issues in Gamification," Ethics and Information Technology, 18, no. 2 (2016): 157–73.
Topic 9	Transparency and Accountability of AI
	- E.g., Deborah G Johnson, "Technology with No Human Responsibility?," Journal of Business Ethics 127, no. 4 (2015): 707.

Tasks

Students will be assigned to one of the topic areas above and will be asked to:

1. Deal with corresponding research paper(s) and prepare a presentation introducing their topic on the basis of the seminal articles given to you.

2. Write an essay about a selected aspect within their topic area but going beyond the seminal article associated with that topic. Students can choose to
   a. explore additional relevant scientific literature on the topic and synthesize that literature to present a comprehensive, balanced, and informed consideration of the topic, or
   b. find a specific use case referring to their topic and describing and explaining the way in which ethical issues of AI appear and/ or may be managed in real-life business practice.

3. Give a short presentation summarizing their essays.

Learning outcomes

Students learn to…

- find and select relevant literature on a given problem or question independently.
- apply discipline and technical knowledge and skills to analyze and evaluate technological influences on a range of managerial questions about innovation, transformation, or entrepreneurship, in particular the ethical implications of AI.
- acquaint themselves with the scholarship of world class research faculty in the areas of digital innovation, transformation, and entrepreneurship, in particular ethics of AI
- understanding some of the leading issues, theories, and methodologies that characterize research in in the areas of digital innovation, transformation, and entrepreneurship, in particular ethics of AI
- apply discipline and technical knowledge to analyze and evaluate scientific processes and outcomes.
- develop written communication skills to structure, explain and defend scientific thinking.
- develop presentation skills to present and discuss research processes and outcomes.

Preliminary Schedule

1. Kick-Off: Introduction and topic assignment **(3 hours + break): Mi, 03.04, 16:00**
2. Refresher workshops on how to design and write a seminar paper **(2 x 2 hours): Mi, 04.04. & 30.05., 10:00 Uhr**
3. **Topic presentations based on given research papers and discussion (2 days/ 3.5 hours + break): Mi, 25.04. & 02.05., 10:00 Uhr**
4. Presentation of the essays **(1 day/ 7 hours + break) Sa, 24.06., 09:00 Uhr**

Relevant Readings

This seminar will drawn on Martin, K. (2022). Ethics of Data and Analytics: Concepts and Cases (1st ed.). Auerbach Publications. https://doi.org/10.1201/9781003278290

Further readings will be announced in due time.

Assessment

Grading in this course is on three main components. Grading rubrics will be used and made accessible to the students in advance.

1. Presentation of Seminal Scientific Paper (20% of final grade)
2. Submission of Seminar Essay (50% of final grade)
3. Presentation of Seminar Essay to the class (30% of final grade).

Teaching Team

Imke Grashoff completed her master's degree in the field of Social Economics and is working as a research assistant at the Chair for Information Systems and Digital Innovation. With a strong interest in topics involving the influence of digital technologies on organizations, collaboration and (the future of) work in general, she is currently pursuing her doctoral studies dealing with ethical issues in the context of AI design, development and deployment.

Jan Recker is Alexander-von-Humboldt Fellow, Nucleus Professor for Information Systems and Digital Innovation at the University of Hamburg, and Adjunct Professor at the QUT Business School, Australia.

In his research he explores the intersection of technology, people and work. He works with particularly large organizations, such as Woolworths, SAP, Hilti, Commonwealth Bank, Lufthansa, Ubisoft, Esri, federal and state governments, and with particularly small organizations ("start-ups") in the consumer goods, hardware, and financial sectors. He tackles questions in the areas of

- systems analysis and design practices in the digital age
- digital entrepreneurship
- digital innovation and transformation in large organizations
- digitalization of products, services, and processes
- digital solutions for a sustainable future

Jan's research in these areas draws on quantitative, qualitative, and computational methods. He has also written popular textbooks on scientific research and data analysis, which are in use in over 500 institutions in over 60 countries. He was Editor-in-Chief of the Communications of the Association for Information Systems from 2015-2020. He is Senior Editor for the MIS Quarterly**.** In 2019, he was named #1 business researcher under 40 years of age by the German Magazine Wirtschaftswoche. He was the youngest academic ever to be named an AIS fellow in 2018. In 2019, he received an "Outstanding Associate Editor Award" from MIS Quarterly. He publishes a podcast called "this IS research".

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