## The results of some of the student projects on empirical ethics of digitization, Master course 2021/22

Dark patterns project winter 21/22

The paper "Cookie Monsters on Media Websites - Dark Patterns in Cookie Consent Notices" investigates the use of dark patterns on US and German websites:

- RQ1: Which dark patterns can be found in consent notices on media websites?
- RQ2: Do more German than U.S. American websites contain cookie consent notices?
- RQ3: Are there dark patterns that have not yet been described and could therefore be specific to media websites?

Findings: Read on in the presentation of the paper at the <u>special track</u> "ELIDT: Empirical Insights on Ethical and Legal Issues of Digital Transformation" at the <u>The Seventeenth International Multi-Conference on Computing in the Global Information Technology</u> 2022 or on ResearchGate.

Sentiment analysis for news reporting on artificial intelligence winter 21/22

The paper "Sentiment Analysis of News Media on Articial Intelligence" examined the research question: Have recent news articles about artificial intelligence generally become more positive, neutral, or negative?

A sentiment analysis for the year 2021 on news of the New York Times and the Guardian was conducted, using the Valence Aware Dictionary for sEntiment Reasoning (VADER).

From the abstract: "In accordance with the evidence that news media on AI show biases towards optimism, we focused our discussion on the values of journalism. We concluded with drawing attention to a potential theory-practice dilemma of applied ethics in journalism of AI news."

The paper was selected for the publication at the <u>special track</u> "ELIDT: Empirical Insights on Ethical and Legal Issues of Digital Transformation" at The Seventeenth International Multi-Conference on Computing in the Global Information Technology 2022.

## The results of some of the student projects on empirical ethics of digitization, Master course 2022/23

Values in Software design

Paper 1: "Online chats the analysis of apps values and related ethical issues

"This paper examines twelve instant messenger apps' values and functions and aims to perform a comparative study of found digital solutions for online chats. Further, the project goal is to link these values with potential ethical issues. The project will be conducted based on a comparative study, responders survey, content analysis, and value analysis of the apps."

Cookies, Cookie modification and dark patterns - legal and design perspectives

paper 1: Cookies Modification Patterns An Examination Of Current Cookie Implementation

"[....] the current implementation of cookie banners in Germany and Denmark is considered. In doing so, we examine the currently prevalent problems of long click paths to select only the essential cookies and the distribution of optional cookies according to their frequency. Before that, a legal classification is given and at the end, the topic is considered from an ethical point of view."

paper 2: Cookie Modification Patterns Dark Patterns In German And Us Newspaper Websites

"European visitors now see cookie advertisements practically everywhere they go online as a result of the GDPR and the ePrivacy Directive. US visitors, however, might have a different experience due to the CCPA. This paper explores how consent mechanisms differ between these countries and how frequent dark patterns are used to nudge users into consent. 100 websites, 50 German and 50 US, were analyzed manually identifying and examining used cookie consent mechanisms. It is shown that the opt-in cookie consent notice was the most common for both countries; however, a significantly higher number of German websites (40 out of 50) were found to use dark patterns in their cookie banners compared to US websites (23 out of 50). The results show that there is still a regulation of consent design missing."

## Paper 3: Dark patterns classification

"Today, with the growth of websites and applications, we can see that companies are doing everything possible to influence the behaviour of users and therefore their decision-making. Indeed, the advantages of this form of persuasion are numerous for these companies. But on the other hand, users are confronted with methods that are sometimes misleading, as is the case with dark patterns. Thanks to psychic elements, these dark patterns direct the behaviour of users towards the direction desired by the company. Thus, our present report contributes to shedding light on the different practices around dark patterns used by

companies. It is also an opportunity to hear from users about their perceptions of these models. We chose to take a quantitative approach to our research by analysing the different dark patterns used by a range of websites and mobile applications."

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