

University of Twente

Bachelor Thesis

Program: Public Governance across Borders

1st Supervisor: Dr. Marinus Ossewaarde

2nd Supervisor: A. Azadeh Akbari

My new colleague AI-

**An analysis on the German discourse about the implementation of AI into the labor market
from an ethical perspective**

Niklas Lademacher (s2810107)

Word count: 11448

Submission Date: 28.06.2023

Abstract

The way social and political actors communicate the introduction of artificial intelligence (AI) is a powerful tool to influence people's perception of this new introduction. Because AI is a technology with inherent ambiguities, the way possible ethical consequences of this introduction are communicated by policy plays an important role in shaping people's perceptions.

This bachelor thesis tries to illuminate the discourse concerning possible ethical issues that may arise with the introduction of AI into the labor market through the scope of a scientific, ethical framework.

The political communication of the German ministries of labor on both the federal and the federal state levels is examined and juxtapositioned with the media news coverage of the German media.

By employing a qualitative content analysis, it is demonstrated that the German government first and foremost tries to prepare the German population by rapidly introducing this new technology into the labor market by promoting the technology as a benevolent force.

The German media discuss this introduction in different ways, however, do not present alternatives to the German governments vision of a rapid introduction of AI into the labor market.

The findings are substantiated through policy documents and press releases of the German Ministry of Labor and Social Affairs (BMAS) and the federal states' labor ministries as well as newspaper articles from four interregional German newspapers. The results show that concrete ethical consequences are not sufficiently discussed by all actors.

Table of Contents

ABSTRACT	1
TABLE OF FIGURES	3
LIST OF ABBREVIATIONS	4
1 INTRODUCTION	1
1.1 BACKGROUND AND STATE OF THE ART	1
1.2 KNOWLEDGE GAP AND RESEARCH QUESTIONS	2
1.3 RESEARCH APPROACH	3
2 THEORY	5
2.1 THE SCIENTIFIC DEBATE ON AI – A TORN FIELD	4
2.2 FLORIDI AND COWL’S FRAMEWORK	7
2.3 THE ROLE OF THE MEDIA AND GOVERNMENT IN FRAMING AI TECHNOLOGIES	10
2.4 CONCLUSION AND THEORETICAL EXPECTATIONS	11
3 METHODOLOGY	12
3.1 CASE SELECTION	12
3.2 METHOD OF DATA COLLECTION	13
3.3 METHOD OF DATA ANALYSIS AND OPERATIONALIZATION	14
3.4 CONCLUSION	17
4 ANALYSIS	18
4.1 THE GERMAN FEDERAL MINISTRY OF LABOR: AI FIRST AND FOREMOST A PANACEA TO GERMANY’S LABOR MARKET PROBLEMS	18
4.2 THE ENVISIONING OF AI IN THE FEDERAL STATE MINISTRIES OF LABOR	21
4.3 THE GERMAN NEWSPAPER COVERAGE	24
4.5 CONCLUSIONS	27
5 CONCLUSION	29
5.1 ANSWER TO THE RESEARCH QUESTION	29
5.1 SCIENTIFIC DISCUSSION	30
5.2 PRACTICAL IMPLICATIONS	31
4 REFERENCES	32
APPENDIX	34
DOCUMENTS	34
DOCUMENTS RETRIEVED FROM THE BMAS (FEDERAL MINISTRY OF LABOR AND SOCIAL AFFAIRS)	34
DOCUMENTS RETRIEVED FROM THE FEDERAL STATE’S MINISTRIES OF LABOR	37
NEWSPAPER ARTICLES	42

Table of figures

Figure 1 the ethics commissions that the framework of Floridi and Cowls is comprised of	8
Figure 2 Ordering of the terms by Floridi and Cowls	10
Figure 3 Coding scheme for the analysis following the framework of Floridi and Cowls	16
Figure 4 Code distribution of the German ministry of labor in Atlas.TI (version 23)	21
Figure 5 Code distribution of the documents of the FSMLs	24
Figure 6 Code distribution of the newspaper articles	27

List of abbreviations

AI	Artificial Intelligence
SME	Small-to-medium Enterprises
FSML	Federal state ministry of labor
BMAS	Federal Ministry of Labor and Social Affairs (<i>Bundesministerium für Arbeit und</i>
<i>Soziales</i>)	
BW	Baden Wurttemberg (German federal state)

1 Introduction

1.1 Background and state of the art

The term AI, coined by John Mc Carty in 1955, used to always be utopian scientific theory rather than actual reality - until recently. Today the technology is at its nascent stage, and artificial intelligence (AI) is being represented by some as the key technology destined to change people's lives drastically; the field itself is marked by swift economic transformations and great societal challenges (Jobin 2019). Most recently, with the publication of the AI Chatbot last November by Open AI named Chat GTP, AI technology has been given unprecedented attention by all sides of society, and concerns about possible labor replacements through AI, although on the scientist's mind for a longer time, now have become widespread throughout society, because the technology is freely accessible to everyone.

Even before, between 2018 and 2021, many EU countries, in addition to the EU, have released their National AI strategy papers, which consequently will turn laboratory technology into political reality (Cath 2017).

In those documents, actors share their visions on how to implement AI into society. In the 2020s, we can expect to experience further policymaking activities by governments worldwide.

One of the most pressing influences AI will have on people's everyday life is within the field of labor; in the word of Germany's minister of labor, Hubertus Heil, AI will become "Kollege Algorithmus" (colleague algorithm) (Heil, H. personal communication, 29.04.2023).

The time has come that people will start asking themselves: Where can AI help me in my everyday life? Will I lose my job? Will I still be capable of making my own decisions at work? And What will this new "colleague" of mine look like?

These all are questions that are direct ethical issues AI brings to the table.

As AI technology will increasingly be used everywhere, the pressure on actors is challenged to design and govern AI to be fair, transparent, and accountable (Cath 2018).

There has been some research on the discourse of AI in Germany in the recent past.

Köstler and Ossewaarde released an article about AI future frames in German political and newspaper discourse (Köstler 2022).

They conclude that according to the media and the government frame AI as a crucial and inevitable addition to Germany's future; however, they claim that the envisioning of the implementation of AI into the German society has not been a project for the people but remains an elitist project steered by political-administrative and mainly corporate interest. A second analysis of the German policy strategy paper has revealed the same picture (Köstler 2022).

However, more research needs to be conducted about implementing AI policies on a subnational level in Germany.

Jobin et. Al. have compared the policy documents strategies of the different subnational governments in Germany; however, they do their analysis on a general, broader level by giving a general overview of the different state policies and their specialties of every state with each other.

They point out the general digital strategies of AI implementation among the different states and provide a broad overview of the different federal state strategies. However, they remain rather superficial in their analysis, calling their findings “preliminary” and “not exhaustive” while contending that AI research would benefit from a stronger focus on a sub-national level (Jobin 2021).

In addition, some research has been done on the implementation of AI concerning its ethical consequences. For example, Ulnicane emphasizes that there is tremendous pressure on governments to lay forward AI policy which includes the needs of all parts of society (Ulnicane 2023).

Finally, there exists some research on the ethical implementation of such technologies. For example, Schiff, in his research on AI policy-making in the US, mentions that despite success for stakeholders invested in social and ethical implications, the translation of ethics into policy appears limited currently (Schiff 2023).

1.2 Knowledge Gap and research questions

Summarized, there already exists some research on the political and media discourse on the envisioning of an implementation of AI in Germany.

There also exists an analysis of policy documents regarding the implementation of AI on the federal state level in German and there exists plenty of research on AI and the need to ethically introduce policies that promote the implementation of AI into society.

However, what has not been researched yet is the discourse of AI implementation into the German labor market.

There also exists a need to look at such implementations through the scope of a unifying ethical framework. My thesis wants to add to this research gap by looking at the discourse about the implementation of AI in the field of labor on both the federal level and the federal state level, as well as in the media in Germany.

It also wants to look at ethical implementation issues that may or may not be mentioned by the media and the German government by applying Floridi and Cowls’ ethical framework called “AI4people” (Floridi 2022).

Up to this day, no research has applied the framework to analyze the discourse on AI implementation in the labor market from an ethical perspective.

Therefore, this thesis aims to examine **to what extent and in what ways the government and the newspapers in Germany refer to ethical principles for a good AI society regarding the envisioned implementation of AI into the labor market.**

The BMAS is responsible for innovation policy-making in the field of labor in Germany.

It, therefore, shapes, in addition to other actors, the political discourse about how to implement AI into the labor market. Hence, to answer the main research question, it is necessary to analyze its political discourse.

The first sub question is: *To what extent and in what ways does the German federal government's ministry of labor refer to ethical principles for a good AI society?*

Germany is a state with a strong federal system in place. Hence, if one wants to analyze the political discourse on AI implementation into the German labor market more profoundly, one needs to include the political discourse on the federal level. Here, the second sub question comes into play:

To what extent and in which ways do the German federal state's ministry of labor refer to ethical principles for a good AI society?

In Germany, the media plays a significant role in the implementation of government measures, particularly in terms of communication and transparency.

They provide information that is important for citizens to understand the measures and their implications. Furthermore, the media provides a platform for public discourse and debate on government measures. In addition, their duty is to enable different opinions and perspectives, enabling a diverse engagement with political issues.

Examining media response to the implementation of AI in the labor policy environment is important because media response often reflects public opinion and can be seen an indicator of how the public perceives the introduction of AI in the work environment.

Therefore, the third sub question is:

To what extent and in which ways do newspapers in Germany refer to ethical principles for a good AI society with regards to labor?

1.3 Research approach

This thesis aims to obtain insights on how the German government and the media discuss ethical implementation issues of AI into the labor market. It intends to analyze how certain ethical issues are taken into account in the German discourse.

This creates important insights, as it assesses how scientific recommendations are actually put into practices in real discourses. Highlighting flaws in the discourse is of great interest, because it is the first step toward taking action and considering all ethical aspects that come with the implementation of an ambiguous technology such as AI. The thesis will examine the discourse around the

implementation of AI into the labor market through a qualitative and quantitative content analysis. A content analysis can help illuminate the discourse on the topic.

The thesis is structured as follows: First, I provide a theoretical background on the scientific discussion of AI ethics in recent years (2.1) and introduce the theoretical framework by Floridi and Cowls on which the analysis is based upon as well as give arguments for its use (2.2). Furthermore, I will give theoretical expectations for the analysis, which are grounded on theory (2.3 and 2.4).

Next, reasons for choosing Germany as the country of analysis will be elaborated upon (3.1), the method will be introduced, (3.2) and the procedure of the data collection and operationalization will be explained (3.3).

Next, the quantitative and qualitative content analysis will be conducted (section 4). The thesis ends with a conclusion (section 5).

2 Theory

In this section, a theoretical framework will be introduced. In this section to provide the research question with a theoretical background.

The section is divided into four paragraphs. First, an overview of the recent scientific debate around itself will be discovered to show the necessity to base the analysis on an ethical framework (2.1). Next, the framework by Floridi and Cowl will be introduced, on which the analysis will be conducted (2.2). Thirdly, I will introduce two paradigms of technology policy to help me develop my theoretical expectations for the analysis (2.3). Lastly, theoretical expectations for the analysis will be given (2.4).

2.1 short summary of the torn scientific and public debate on AI

AI is a complex emerging technology with many implications and almost unprecedented inherent complexity. Discussions about appropriate ethics and recommendation for the use of AI technology, in combination with recommendations for good AI- governance, have experienced a significant proliferation over the last few years.

This is understandable, as from an implementation viewpoint, AI is a highly ambiguous technology that brings chances and risks.

Accordingly, since 2016, think tanks, the media, and consultancies have engaged in an intense debate to steer the development of AI in a direction that will mitigate its risk and contribute to overall social benefit (Ulnicane 2022a).

In the same way, an increasing number of institutions and commissions coming from different sites of society and including private stakeholders as well as governments themselves, have tried to create appropriate ethical frameworks for the usage of AI technologies (Floridi 2022).

Importantly, Cath has shown how fragmented the field is while providing us with an overview of the vast array of scientific discussions present in recent years, as it touches upon all parts of society. She states: “Across the globe, industry representatives, governments, academics, and civil society are debating where legal-regulatory frameworks are needed and when, if ever, ethical or technical approaches suffice. Even if those questions are answered, the issue of the extent to which our existing ethical and regulatory frameworks sufficiently cover the impact of these technologies remains “(Cath 2018).

In her article, she identifies four potential issues regarding the implementation of AI which need clarification.

The first issue revolves around the imaginaries employed by the concerned stakeholders underlying data-driven technology, stating that: “Various academics expertly questioned the imaginaries

underlying data-driven technologies like AI in current debates and highlighted the risks of the use of AI systems. “

Here, an analysis of the language employed by respective stakeholders can illuminate the imagination of how this new technology is ought to be used.

A second issue revolves around the concern that technical concepts simplify the multi-faceted social concepts that AI implementation takes active influence on and thereby hiding the considerably complex potential consequences of such technology, turning transparency into a box-ticking exercise and there exists need to define who benefits from these AI technologies and what the underlying cultural logic is.

A third discussion revolves around what actors are exactly driving the AI technology and what good AI- governance looks like. Lastly, there exist elaborate discussions around concerns about the issue of problematic black boxes in AI technologies, for instance, in vital areas such as finance or education, which are often used to get industry involved in these areas.

This particular discussion gets even more complicated because AI strategies might be presented as seemingly non-comprehensible black boxes, even when they are.

A regular practice exists of making AI technology seem complicated and incomprehensible, which is especially beneficial to private cooperation to justify their involvement in policy making.

What further adds to the fragmentation is that the above-mentioned issues are discussed by academia and tech companies that release their own AI- strategies on ethics. (Cath 2018)

To conclude, the discussion about AI- implementation is a greatly fragmented field in which academia, political actors and stakeholder, companies, scientists from all imaginable fields, and many others release their own views and approach on how to handle the introduction of AI-policies into society, which is from a scientific and societal point of view hugely problematic.

A second layer of profoundness that exacerbates this fragmentation is a lack of consensus among scholars and those involved in the discussion about their definition of what artificial intelligence exactly is, leading to a fragmentation of what is being discussed (Ulnicane 2022b). This issue does not need to be addressed in this thesis since AI will be defined as what the actors make of it. However, it shows that it is necessary to include articles that include the term "AI" exactly to avoid confusion. This section has shown that an analysis of AI discourse is quite complicated, as even the scientific discourse is a very torn field at this moment. Hence, I argue that to conduct such an analysis, looking for a unifying framework that can be applied to the analyses is indispensable. Here, the framework created by Florid and Cowlis comes into play.

2.2 Floridi and Cowl's scientific framework on AI ethics

The thesis will evolve around the framework given by Luciano Floridi and Josh Cowl in their article “A Unified Framework of Five Principles for AI in Society” (Floridi 2022).

In this paragraph, the framework will be introduced, and I will give reasons why it has been chosen to analyze ethical implementation issues of AI and therefore forms part of the research question. In this section, arguments for its utilization will be given.

Floridi and Cowl's desire to create a unifying framework stems from their criticism that an ever-increasing number of ethics committees by all sides of society have been put into place throughout Europe in recent years. Almost every country and every supranational institution opted for their own frameworks, the report of Germany's ethics commission being one of the most recent examples. This has led to unnecessary repetition.

Hence, Floridi and Cowl's seek to lay out a universal framework of AI principles. According to them, this is necessary as the sheer scope of different recommendations and policies has become overwhelming in recent years.

There are mainly two reasons why this framework can solve the issue and why it is so fitting to answer the research question within the scope of this thesis.

Firstly, the framework is concisely limited in scope, so it can be applied to the scope of the discussed policies and news articles. In contrast, other frameworks, such as those by the commissions themselves, are very extensive and about too broad a range of potential applications and fields for an analysis to be conducted in a paper the size of this thesis with them thoroughly.

Secondly, the framework includes the main conclusions from several national and supranational Commissions, which include different governmental and societal stakeholders.

They draw their framework from their comparative analysis and assessment of six high-profile initiatives which were established to tackle problematic ethical issues concerning the utilization of AI technology.

According to Floridi and Cowl's the commissions were chosen because “(...) they are recent, published within the last three years; directly relevant to AI and its impact on society as a whole and highly reputable, published by authoritative, multistakeholder organizations with at least national scope.” (Floridi 2018, p. 538).

The following figure shows from which commissions the framework is comprised:

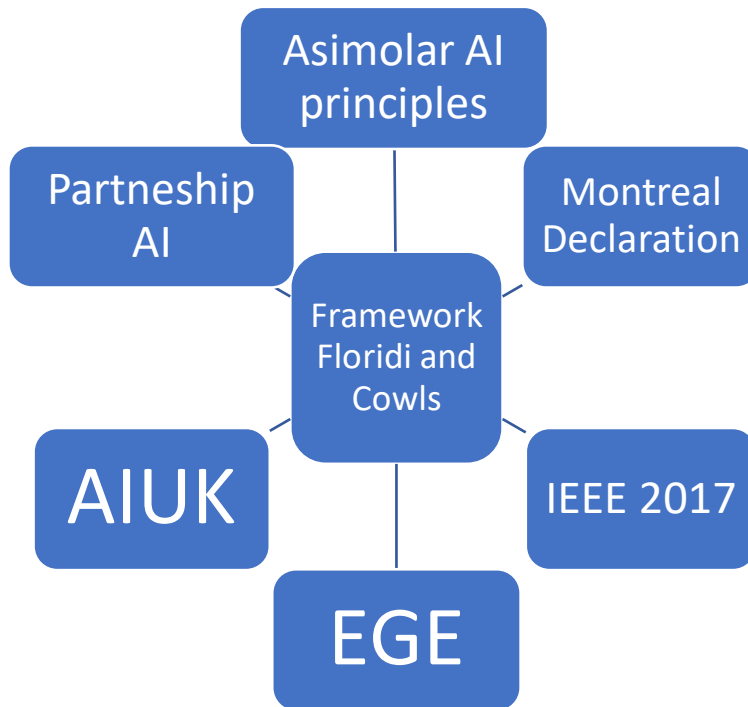


Figure 1 the ethics commissions that the framework of Floridi and Cowls is comprised of

Their framework revolves around 5 principles. In the following, the five terms by Floridi and Cowl will be presented and explained; their definitions will guide the analysis and form the basis for the coding scheme that is developed in section 3.2:

1. “Beneficence”

Perhaps the most obvious one, this principle is about using AI-technology to foster human well-being. Different sources are describing it as “common good” (AUIK and Asilomar) or “well-being by Montreal and IEEE. In other words, it is being described as ensuring that as many people as possible profit from the introduction of AI technologies.

2. “Non-maleficence”

Although the equivalent counterpart to the same at first sight, this term describes the do-no-harm counterpart of benefiting people and the planet. It is essential to use it in addition to beneficence because it is explicitly mentioned in most commissions.

Some of the terms that include non-maleficence worth mentioning are the impairment of an arms race with AI, the importance of AI operating within certain constraints' i.e. avoiding the misuse of the technology and ensuring that developers work against the risk of their own technological innovations.

3. "Autonomy"

Because an increasing use of AI-technologies entails the loss of some decision-making powers from the human side, the term "autonomy" comes into play. It is defined by Floridi and Cowls as "(...) striking a balance between the decision-making power we retain for ourselves and that which we delegate to artificial agents." (Floridi 2022) Maintaining a delicate balance between humans and AI is important because of the risk that emerges that could undermine human autonomy. The power to hurt, destroy or deceive human beings should, therefore, never be included in AI technology. Also, humans should be able to choose when to delegate decisions to AI systems, with another important principle being reversibility (i.e., deciding to decide again).

According to them, human decision-making power should only be ceased where efficacy outweighs the loss of control over decision-making.

4. "Justice"

Perhaps politically the most topical and difficult term to define, this term seeks to counter the inherent inequality and injustices AI may contribute to. Justice entails a few other terms, such as a fair distribution of prosperity across society, the perseverance of solidarity within society and avoidance of unfair treatment and discrimination. Additionally, equal access to technology needs to be fostered. The authors warn of the risk of bias in AI technologies and argue for a need to defend against threats to solidarity.

5. "Explicability"

This last term can be seen as a novel addition to the introduction of AI. Earlier bioethics only had the first four terms in mind. This term is important to include because of the significant disparity of people who develop and use AI technology, who have a greater understanding of the technology itself, and those who are the receivers of such technology in everyday life. Therefore, it is crucial to consider the decision-making process conducted by Ai. This term remains especially important, as AI works remain invisible and unintelligible to everyone safe, the most diligent experts. Most importantly, the questions "How does it work" and "Who is responsible" need to be answered. Furthermore, the authors mention that these last terms could serve as a prerequisite for all other terms to take place, as

the other ones can only be assessed if we understand the technology even as outsiders; only in this way can we as society hold people accountable for unethical uses of AI.

Based on the order these terms are mentioned in the article by Floridi and Cowls the analysis will be conducted (figure 2).



Figure 2 Ordering of the terms by Floridi and Cowls

2.3 Two paradigms of technology policy making

Schiff's articles can help me develop theoretical expectations for my analysis, as his analysis is about a very similar topic – the policymaking of AI in the US (Schiff 2023).

In his analysis of AI policies in the US, Schiff differentiates between two competing paradigms of innovation in technology policymaking. The traditional strategy with traditional innovation policy often revolves around strategic economic and geopolitical considerations and reference to the innovation frame is often pervasive throughout innovation technology policymaking.

The second paradigm, namely the transformative paradigm, can deviate from an economic focus and instead focus more on societal objectives and public participation in policy to solve major societal issues, I.e., on the receiving part of the introduction of such new technologies (Schiff 2023).

If one were to follow the first paradigm of technology policymaking, one infers that the German government's use of language will mainly promote the further usage of technologies in combination with promoting an increased focus on fostering the STEM fields and mentioning the economic importance of technology rather than focusing on possible societal issues such as loss of labor. If one were to follow the second paradigm of technology policymaking, one could expect the German government to create a stronger focus on communicating the upcoming societal issues and through it foster societal participation and public discourse.

Schiff's categorizing of the approach of innovation in the technology paradigm can help us determine whether the language used within the policies and the newspaper coverage follows the first or the latter paradigm.

2.4 Conclusion and theoretical expectations

To conclude, the scientific debate on AI ethics is greatly fragmented and needs unification and conciseness, here the framework by Floridi and Cowls will be used to solve this issue.

It has been shown that the German government with its strong economic ties has pushed in its policymaking an economic vision of AI (Köstler, Ossewaarde 2022). Consequently one could infer that it has so far followed the traditional paradigm of innovation in technology policymaking.

Hence, it can be expected that this will be mirrored in the data with its typical characteristics such as empowering regions, clusters, or hubs of innovation, supporting small- and medium-sized enterprises (SMEs), and aligning academic, industry, and public sector activity; as well as in its use of language (Schiff 2023).

However, the recent release of Chat GTP and the consequential turning from an AI future vision into contemporary reality could shift the German government's aspiration to involve societal actors more and opt for a more inclusive conversation with society. An important scholarly and policy question is therefore whether technology governance in Germany is indeed characterized by such a shift.

Whether the German media discusses societal issues more frequently and what language it uses to describe the potential implication of AI regarding labor remains to be seen.

As Köstler and Ossewaarde have mentioned in their articles, media holds within itself both an economic and a democratic role (Köstler, Ossewaarde 2022).

Within the democratic role, I expect that the media considers different aspects of issues of potential ethical issues regarding AI implementation and therefore consider issues of societal participation and public participation. Within its corporate economic role, I expect the media to follow the line of the German government more.

3 Methodology

In my thesis, I seek to examine in what ways and to what extent the German ministries of labor and the media refer to ethical principles for a good AI society.

This section will display how I seek to achieve this research objective concretely.

AI sprang from laboratory technology into political practice with the release of Germany's AI strategy in 2018. Hence, this study will set 2018 as its starting point and take May 2023 as its endpoint.

The selected case, Germany, will be described, and the reason why it's interesting will be given (3.1).

The method of data collection will be described, in which I will explain how the data was gathered and why this data is fitting to be analyzed (3.2); the method of data analysis will be explained, in which the method of how I will analyze the data will be portrayed and a coding scheme will be provided in which the theoretical framework of Floridi and Cowls will be operationalized (3.3). The section ends with a conclusion (3.4).

3.1 Case selection

This thesis aims to get insights into how the German ministries of labor on different levels refer to ethical principles of a good AI society in their discourse regarding the implementation of AI into the labor market. This discourse is juxtapositioned with the German newspaper coverage.

There are a few reasons why Germany is an interesting case to analyze.

First, the pressure and expectations to not miss out on making use of the new opportunities AI wields this time are high throughout the German population. This is because the German population is acutely aware that the German government has missed the last wave of digitization.

This pressure gets reinforced by the fact that Germany represents Europe's strongest economy. The country is expected to play an essential role internationally in the upcoming "AI revolution," especially as one of the leaders of the EU.

However, introducing AI into its labor market is no easy task for its ministry of labor (BMAS). This is due to a few reasons.

Firstly, Germany's economy relies to a large degree on its strong network of small-to-medium enterprises, and it needs to include them in this process if it wants to continue its economic success story.

Secondly, Germany has a unique labor market structure with strong trade unions; introducing AI into the labor market without broad public debate is almost impossible to achieve.

Thirdly, Germany has a stark federal system in place that fosters intense competition among the federal states. Therefore, it is also crucial to analyze how AI's implementation into the labor market is envisioned within the FSMLs.

Fourthly, Germany has in the past laid a strong focus on traditional values, and its population is considered to be, in general, quite skeptical of digital technologies; Germany is generally considered

cautious regarding the implementation of new technologies and is careful in considering possible ethical implementations (c.f. Köstler 2022). Therefore, it is also an interesting case for observing the political discourse of the BMAS from an ethical standpoint.

The newspaper coverage of this implementation of AI into the labor market is particularly interesting to analyze, as it is ascribed to a high role in German society given the country's history of persecution of the media by the Nazis. In Germany, the freedom of the press is guaranteed by the basic law and enjoys a high diversity of opinions which is supposed to capture the mood of its population.

The discourse on the topic in the German newspaper coverage can be considered quite insightful, as it contains contrary visions of economic interests and traditional values, reflecting the general mood of German society.

Thus, the German media should be expected to discuss possible ethical upsides and downsides of such an implementation vividly and controversially, which can lead to interesting insights and give a fuller picture of the topic.

3.2 Method of Data collection

In terms of the data that was collected for the analysis, only secondary data was analyzed.

I analyzed policy documents, official reports, and press releases that are displayed for the public on the official websites of the BMAS and the federal and state governments.

Within these documents, the envisioning of AI implementation into the labor market is communicated by the ministries of labor.

The policy documents and press releases of the FSMLs are especially interesting to analyze. On this level, the consequences are measurable for the citizens.

To enhance the reproducibility of this study, I followed a strict procedure to retrieve the documents.

First, I used the search option on the respective websites.

Then, I looked up the documents using the keywords "künstliche Intelligenz" (Artificial Intelligence) in combination with the keywords "Arbeit" (Labor) and "Arbeitsplatz" (Workplace). These keywords were chosen as they are the terms closest related to the topic of this thesis. In addition, the retrieved documents had to include the word "künstliche Intelligenz" (Artificial Intelligence) or KI (AI) at least once. This is important because AI is in itself not an easily definable concept. It is best to not let the term be defined by me but rather to let others define what is meant by AI.

I only included articles, press releases, and reports in the timespan from January 2018 - May 2023.

This ensures that these documents are up to date.

From the website of the BMAS, I collected the most relevant and recent 20 documents that appeared (recent as defined by the BMAS). Regarding the documents of FSMLs, the first 5 most relevant documents that appeared were analyzed.

The final data collection mainly consisted of different kinds of documents, that consisted of mostly 2 to 10 pages.

On the other hand, I collected articles from four German newspapers to analyze the newspaper coverage in Germany.

I collected newspaper articles from 4 leading interregional newspapers, which take on conservative to liberal-left political views, to include a variety of political and ideological stances, namely Die Taz, Die Zeit, Die Welt, and Die FAZ.

The two national newspapers, die Welt and Die Taz, are considered in the conservative and left spectrum, respectively.

The FAZ is considered to represent the center-right liberal conservatives and is considered to be economic-friendly, whereas Die Zeit is considered to represent the left-liberal political spectrum. By combining these four newspapers, a complete picture of the media's outlook on the issues will be obtained, leading to more representative results.

Again, I followed the same strict routine as in collecting the data of the governmental documents for the same reasons and to ensure the proportionality of the data. Only freely accessible articles were collected. This enhances the reproducibility of this study since these articles are not situated behind a paywall.

Again, the chosen keyword was “*Künstliche Intelligenz*” (artificial intelligence) in combination with the keyword “*Arbeit*” (Labor) or “*Arbeitsplatz*” (workplace). The 10 most relevant (as defined by the respective newspaper) articles were chosen.¹ This way, a balance among all three actors is ensured. No documents older than 2018 were collected.

In total, 20 documents from the website of the BMAS, 35 documents from the websites of the FSMLs, and 37 newspaper articles were collected.

3.3 Method of data analysis and Operationalization

In this section, the analysis will be operationalized, the coding scheme will be provided and my method for the data analysis will be described.

The chosen method to conduct the analysis is a context analysis, “Qualitative Content Analysis enables a systematic analysis of textual material” (Mayring 2023). It is defined as “research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh 2005). A qualitative content analysis used to analyze a wide arrange of textual data to derive meaning out of them. The underlying

¹ On the website of die FAZ, I could not retrieve more than 7 documents that were freely accessible.

assumption of this type of research method is that reality is being viewed as social constructs contingent on language (Given L M. 2008).

Content analysis can also identify conscious and unconscious messages within a text, and via coding, researchers can interpret concepts that are present but also not present in text. A content analysis can be utilized for both quantitative and qualitative analyses. By conducting a content analysis quantitatively, the “to what extent” part of the research question can be answered. A qualitative analysis involves interpretation and can be used to answer the “in what ways” part of the research question. The purpose of the qualitative content analysis is to examine the content and meaning of texts, its narrative structure while looking at the wider context of the text. In addition, it serves to recognize key content such as themes, messages, or frames within texts to develop insights into patterns, structures, or contradictions. The method will be used as it was identified by Schiff as a greatly adequate method in his articles about AI policies in the US. He stated that given the fact that AI policies as an emerging policy domain reflect an unusual degree of contestation between economic, social, and ethical goals, this approach arguably serves as a strong critical test (Schiff 2023). This can be applied to my case Germany in the same manner.

During the process typical examples will be provided. German citations will be translated into English by me. The name that is displayed in the brackets (for example, Arbeitsministerium 1) is the same name of the documents that are in the ATLAS.TI files. Each article will be coded with the help of the qualitative analysis software Atlas.Ti (version 23). The great majority of documents were gathered, downloaded, and put into Atlas.Ti on the 18.05.2023.

To make the analysis process feasible, the framework of Floridi and Cowls must be operationalized. This is being done by taking the term sub-categories that Floridi and Cowls explicitly mention in their articles under the respective term, which are, in turn, citations from the six ethics commissions, modifying them and adequately applying them to the coding scheme using these terms as cues and keywords for the coding procedure.

For the term “Beneficence” the terms “promoting well-being”, “common good”, “humanistic use” and “sustainability” are being mentioned.

For the term “non-maleficence”, the terms “human rights”, “caution”, “upper limits on future AI capabilities”, “within secure constraints”, and “avoid misuse are being mentioned.

For the term “autonomy” the authors mention the terms “no impairing of human beings to set their own standards and norms and be able to live according to them”, “no vesting of the power to hurt humans”, “humans should choose how and whether to delegate decisions to AI systems, “decide-to-delegate”, “meta-autonomy.

For the term justice, the authors mention the terms “equity”, “solidarity”, “mutual assistance” “impairment of discrimination”, “empower”, and “economic flourishing”.

Lastly, For the term “Explicability” the authors mention the terms “transparency”, “accountability”, “intelligibility”, “understandable and interpretable, “accountability”, “decision about who should decide”.

In the following the coding scheme is presented:

Concept	Category	Cues and keywords
Floridi and Cowls first concept	“Beneficence“	„Promoting well-being“; “sustainability”; humanistic use; “common good”, “for the people/citizen”
Floridi and Cowls second concept	“Non-maleficence“	„Personal privacy “; „protect human rights “; „caution“; “set upper limits of AI use“; “avoid misuse“; “overuse“; “harms”
Floridi and Cowls third concept	“Autonomy“	„autonomy “; „balance between human and machine-led decision-making“;” human-choice“;” decide-to-delegate“;” control“; “disparity of autonomy”
Floridi and Cowls fourth concept	“Justice“	„Shared benefit “; shared prosperity “; „equity“; “solidarity; “mutual assistance“; “flourish mentally, emotionally and economically alongside artificial intelligence“; elimination of discrimination“;
Floridi and Cowls fifth concept	“Explicability“	„Transparency; accountability“ “understandable and interpretable“; “intelligibility”

Figure 3 Coding scheme for the analysis following the framework of Floridi and Cowls

3.4 Conclusion

To answer the research question, freely accessible documents from the websites of the ministry of labor of Germany (BMAS) will be analyzed through a quantitative and qualitative content analysis using the coding scheme in ATLAS.TI to determine how the media and the German government are addressing possible ethical implementation issues of AI into the labor market (sub question 1). Then, the same method will be applied to analyze freely accessible documents of all federal state's ministries of labor (FSML) as well as freely accessible newspaper articles from four popular newspaper outlets (sub question 2 and 3).

In the end the combined findings can be summarized to give a definite answer to the main research question. To conduct the analysis the framework created of Floridi and Cowls has been operationalized and form the base on which the documents are coded and analyzed in ATLAS.TI.

4 Analysis

The following section will provide an in-depth understanding of the way how ethical issues, that are contained in the framework “AI4people” are being referred to by the BMAS (federal ministry of labor), the FSMLs (federal ministries of labor) and the newspapers based on the coding scheme that was presented earlier (3.3). The analysis will follow in its structure the three sub questions and is divided into three sections. The first section will illuminate the way the BMAS considers these ethical questions within its narratives and in what ways It does so. Then, the documents of the FSMLs will be analyzed to point out their differences and similarities. And lastly, the same will be done with the documents of the newspapers to explore how this discourse within them is different or similar.

4.1 The German federal ministry of labor: AI first and foremost a panacea to Germany’s labor market problems

The BMAS’ envisioning of AI as the solution to many of Germany’s various labor market issues overshadows all its other concerns that may arise with introducing the technology into the labor market, as displayed in the framework of Floridi and Cows.

In the BMAS’ documents the term “beneficence” was by far the most frequent one referred to with thirty corresponding text passages (see figure 4).

In addition, to the BMAS, it is clear that the implementation of the “colleague algorithm” (Arbeitsministerium 1, p.5) or “AI-based ‘team members’” (Arbeitsministerium 1, p.2) in the labor market is inevitable.

In this way, the BMAS frames AI, originally supposed to be a tool, as something equal to a human in the German labor market, stressing its importance for the German economy.

With humans at its side, it will continue the success story of the German economy.

To the BMAS, AI will shape the labor market for the better, and it will do so “rapidly” (Arbeitsministerium 1, p.1. By better, the BMAS means that AI is the remedy to German society's many problems, such as labor shortages, slow bureaucratic processes, and an aging population with overwhelming burdens for health care and will therefore push German society forward (Arbeitsministerium 1, Arbeitsministerium 13).

The BMAS calls this transformation of the job market “AI development for the common good” (Arbeitsministerium 7 p.1). In this way, it directly refers to one of the principles summarized under the term “beneficence”.

The BMAS emphasizes this several times and even states: “the benchmark for a successful development and application of AI is its benefit for humans and society” (Arbeitsministerium 8, p.1). Although the BMAS states that the AI yields within it a high potential to foster the common good and that this is “undisputed” (Arbeitsministerium 7, p.2), it has created opportunities to talk about negative

risks that might accompany this “AI development for common good” in which citizens give their own perspective on such developments (Arbeitsministerium 7). This may seem contradicting to the outside observer.

The BMAS also sees in AI technology something that brings with it humanistic opportunities (in line with the term “beneficence of Floridi and Cowls). One example that the BMAS gives of how such humanistic use of AI could look like is that AI could be used to “ease the bureaucratic burden of caregivers” (Arbeitsministerium 1, p.6). The BMAS also states that it can help create personal more time for human interactions (Arbeitsministerium 1).

To the BMAS, the emerging potentials of AI to create a “better, more productive and safer working world” (Arbeitsministerium 17, p.1) should not be hindered by potential maleficent effects of AI, rather the German society (“we”) should be “brave in the face of new innovations” in order to put such technology into practice (Arbeitsministerium 17 p.3). In this way, the German government tries to respond to the overly skeptical perspective on the digitization of German society in recent years, equating AI in labor to the implementation of other digital technology in recent decades.

Quantitatively this is shown by the fact that there were only seventeen text passages that referred to the term “non-maleficent”, far less than references to the term “beneficence” (see figure 4).

Consequentially, the impairment of potential maleficent effects of AI is held at an observational stage. This is put into words and communicated by the BMAS through the establishment of so-called “AI observation centers” in cooperation with the EU to make the technology “trustworthy” (Arbeitsministerium 9, p.3). Their purpose, however, is not to slow down the rapid implementation of AI into the German labor market; instead, its harmful effects will be observed in addition to its beneficial effects. Prohibitions are considered to be the “wrong approach” (Arbeitsministerium 1, p.11). Similarly, the name “observation center” can be understood as a clear communication by the BMAS that prohibitions are currently no option.

However, that the BMAS is still aware of the ambiguous nature of AI is shown by a frequent mentioning in the documents to “introduce a clear framework in its regulation” (Arbeitsministerium 5, p.2), which are and this is in line with the earlier remarks, still being developed. The possible maleficent uses of new AI technology are often mentioned in the same sentence with its chances being mentioned first (c.f Arbeitsministerium 11, Arbeitsministerium 17).

In addition, and contrary to scientific concerns (c.f. Klinova, K., & Korinek, A. 2021) the BMAS states that people do not to be worried about possible labor replacements as “there are no signs for massive losses of jobs” (Arbeitsministerium 14, p.3).

Referring to the term “autonomy” and following the same approach, it states: “We must set the correct course for the AI to serve us, not the other way around” (Arbeitsministerium 1 p.2). What exactly is meant by this is difficult to determine; however, to the BMAS, the potential loss of control of humans

over AI seems to not be a pressing issue at the moment, also shown by the fact that it is the least preferred term at only five findings (see figure 4).

Regarding the term “justice,” which refers to fourteen times, it recognizes a few potential issues that may arise through the rapid introduction of AI into the labor market. For example, it recognizes the potential threat of societal polarization that comes with the transformation. It states that: “we cannot allow ourselves a polarization of society” (Arbeitsministerium 1, p.8). In addition, it mentions the inherent problem of discrimination that AI entails (Arbeitsministerium 3, Arbeitsministerium 17). It relies on the welfare state to take in people that might be negatively affected by the transformation it states that “it is important that the welfare state gives people security” (Arbeitsministerium 1, p.8). However, Contrary to this statement, the BMAS also sees the introduction of AI as a chance for more “participation and equity” (Arbeitsministerium 17, p.2), as well as an enhancement for the welfare state, to make it more “citizen-friendly” (Arbeitsministerium 1, p.6). Lastly, referring to the concept of “justice,” it states that AI needs to serve the individual and the community (Arbeitsministerium 5). From the findings, it can be inferred that the BMAS tries to achieve this by supporting its strong network of SMEs in so-called “future centers,” Germany’s economic backbone (c.f. Arbeitsministerium 10).

The term “explicability” is referred to twenty-three times. For the BMAS, there are mainly three reasons why the new technologies must be explicable.

First, to the BMAS, the technology must be understandable for employees to keep up with the pace of the transformation and for them to “recognize the transformation as a chance” (Arbeitsministerium 16 p.2).

Secondly, it is important to have them explicable and transparent for experts to evaluate their risk (Arbeitsministerium 5) and thirdly, most importantly, as this is the most often-mentioned reason for them to be used in SMEs, which will increase Germany’s economic competitiveness (Arbeitsministerium 10, Arbeitsministerium 11, Arbeitsministerium 17, Arbeitsministerium 18). The BMAS seems to lay little focus on making the technology understandable for the employee, but rather for the employers.

From this, it can be concluded that the focus of the BMAS does not seem to be that the commoner understands the technology to mitigate risks of abuse by employers, as Floridi and Cowls meant, but rather to make the technology understandable and accessible for SMEs.

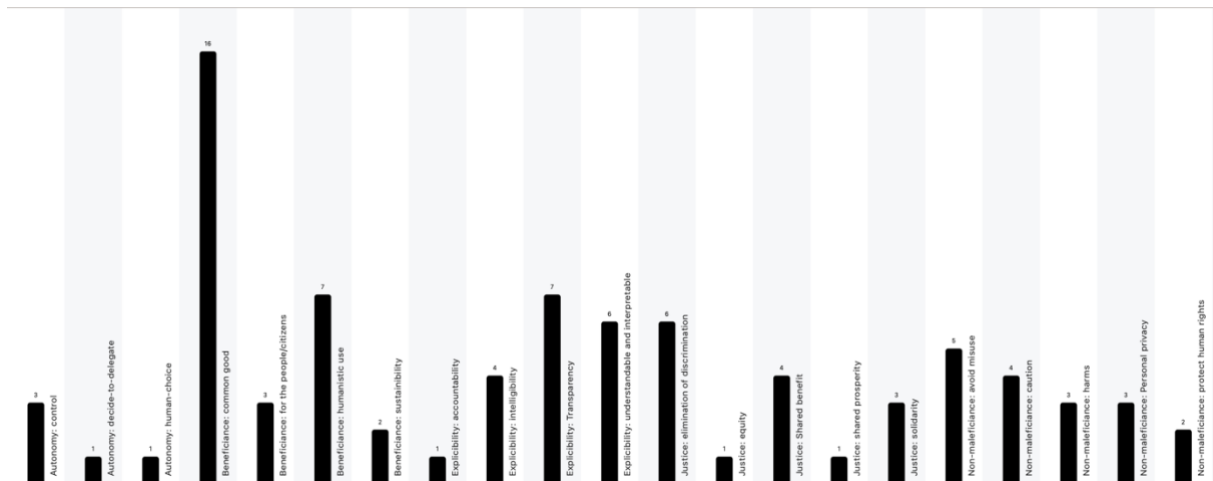


Figure 4 Code distribution of the German ministry of labor in Atlas.TI (version 23)

4.2 The envisioning of AI in the federal state ministries of labor

The federal ministries of labor mirror the BMAS’ focus on the terms by Floridi and Cowls, seen by the fact that the terms are weighted equally (see Figure 5). However, a closer look reveals regional differences among the states.

Although there are no severe deviations from the narrative of the BMAS, the FSML see their role in implementing the AI in the best possible way that is in line with their regional prerequisites. Hence, the federal system can be considered well-alive.

While on the FSML’s websites of some states, such as Brandenburg or BW, lots of documents could be found on the website of other FSMLs no, or only fewer than five documents could be found.

Less than five documents were found in the states of Bavaria, Hesse, NRW, Saxony, and Thuringia.

No documents were found in the Federal states: Saarland, Lower Saxony, Mecklenburg, and Bremen.

It might be that in these states, the ministries of labor either do not discuss the topic of AI or that AI as a field is situated in other ministries - which in itself could give insights into which fields of society the respective federal state governments regard most affected by the introduction of AI - or that the consequences of AI in the field of labor have not reached a reaction by the ministry to an extent that sees these ministries take measures on the topic.²

In the same manner as the BMAS, the FSML portrays AI as, first and foremost, a beneficial force.

This is mirrored in its referring to Floridi and Cowls’ terms. The FSML mentions the term “beneficence” the most, by a large margin - at 59 times.

However, on a closer look, they concentrate on different aspects of how the technology could benefit the respective state.

² Of course, it from these findings it cannot be concluded that the topic as such is not being discussed. For example, in Bavaria, the topic of AI is the responsibility in its digital ministry.

In the following, I will give some examples of the ways the FSML, in states in which sufficient documents could be retrieved, refer to the term “beneficence” to show in what ways this is done: Baden-Württemberg (from here on BW) announces the implementation of an “AI-ecosystem” Baden-Württemberg 1, p.2), referring to it in accordance with the green label of its government; the state has been governed by the Greens for a long time. In this way, the government announces AI technology as a new part of the environment, preparing society for a profound implementation of such technology. BW also cheers the beginning of a new race to the future of AI and, in this way, mirrors the narrative of the inevitability of its implementation; in the same way, the BMAS frames it. It states: „AI is the door through which we must pass to ensure our country's future and competitiveness “(Baden-Württemberg 4, p.2). Through this wording, the government of BW stresses the impossibility of a future without AI.

Other states see it as a tool to foster the competitiveness of their SMEs and an opportunity to create new jobs (c.f. Brandenburg 1, Rheinland-Pfalz 1, Sleswig-Holstein 5). For example, Sleswig-Holstein states: “As a state, we support these projects because they strengthen the competitiveness of small and medium-sized enterprises in the medium and long term and thus help to create new jobs” (Schleswig-Holstein 3, p.2).

Surprisingly, even at this low level of governance, only a few instances exist in which AI is recognized as a tool that could potentially foster social well-being. For example, Brandenburg or Hamburg recognize the opportunity of AI to relieve social issues such as the burdens of workers or to use it in hospitals (Brandenburg 3, Hamburg 1). Additionally, these are no different from the examples the BMAS gave.

In the same manner as the BMAS, the FSMLs use the term “non-maleficence” less than the term “beneficence”. Overall, passages which referred to the term “non-maleficence” were referred to twenty-nine times. In most of the document of the FSMLs the term was not referred to. The ones that did were Brandenburg, Berlin, Bavaria, and Hamburg.

Three of the four states remain unspecific in how where they concretely see the technology being used maleficently. Brandenburg mentions the creation of an AI conference in which possible bad implementations of AI usage are ought to discussed. Hamburg mentions possible consequences of discrimination through an implementation of AI into the public administration (Hamburg 2). It states: „Clear framework conditions must apply to the use of automated systems and artificial intelligence, especially where algorithms influence administrative decisions “(Hamburg 2, p.4), mirroring the language of BMAS when it talks of “frameworks”.

The only FSML that concretely refers to maleficent consequences that could emerge from the implementation to AI into the workspace is the labor ministry of Thuringia, governed by a left coalition. It refers to the term in the context of labor protection and the usage of AI. It states:

“Increased controls and the commitment to good occupational health and safety are of increasing importance” (Thüringen 2 p.2)

Concerns about autonomy are even rarer referred to. Hamburg refers to it in the context of its usage in public administration (Hamburg 3). Brandenburg refers to it but mentions that this fear: “cannot lead to a nonsensical debate about regulation” (Brandenburg 2, p.25). This is in line with the BMAS’ outlook on the topic.

In the same manner as the term “beneficence” the term “justice” got interpreted in different ways. Seven of the states referred to the term justice. In total, I detected 18 passages in which the issue of “Justice” was referred to.

Berlin lies its focus on the potentials of AI to help create solidarity with very small companies and by using it to employ more disabled people (Berlin 3). It states: “they (small companies) can't manage the digital transformation without help" (Berlin 1, p.2).

NRW sees the opportunities of AI to potentially combat criminality in NRW, it states: “Digitized processes, artificial intelligence and algorithms will make it possible to "pin down" those behind organized crime and moonlighting.” (NRW 1, p.6). Sleswig-Holstein emphasizes the opportunities of AI to create new jobs for young people and fosters its availability for SMEs thereby creating shared benefit: “We want to generate added value from the use of new technologies, create new jobs and keep young people in the country.” (Schleswig-Holstein 2, p.3)

Thuringia mentions its opportunities to foster self-independence of elderly people (Thuringia 1).

This is all in line with the AI as the imagined force to help as a remedy against many of the state’s specific problems, that can be observed at the governmental level as well.

However, it must be mentioned that it is exceptional to see that Thuringia and Berlin explicitly refer to concrete cases in which AI can help disadvantaged population groups.

The same trend can be observed with the term “explicability. “Text passages in which the FSMLs refer to the term “Explicability” are the same proportion as the BMAS with 49 times.

Again, the majority of the FSMLs utilize the term in the sense of making the technology understandable for SMEs for them to use the new technology effectively (Baden-Württemberg 1,3,4,5, Brandenburg 1, Hamburg 1, 4, Rheinland-Pfalz 1, Sleswig-Holstein 5). On rarer occasions, some states try to make the technology explicable for the common citizen or for worker unions (Berlin 1, Brandenburg 2, Saxony 2, Sleswig-Holstein 1, or Thuringia 1).

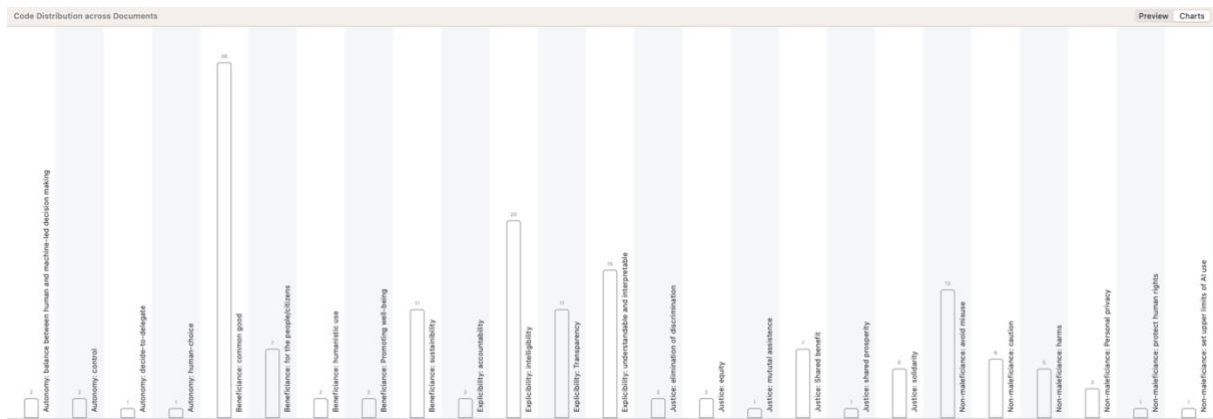


Figure 5 Code distribution of the documents of the FSMLs

4.3 The German newspaper coverage

Although the newspapers do not present a different view on the inevitability of the introduction of AI, the analysis shows that the terms are differently weighted (see Figure 6).

The newspapers refer to the term “non-maleficence” proportionally more.

The term “beneficence” was referred to ninety-four times. However, the results also show that the context in which the term was referred to strongly depends on the newspaper's political leanings.

Saliently, the conservative, economy-friendly newspapers Welt and FAZ almost exclusively refer to the beneficent effects of introducing such technology. In the retrieved articles, these newspapers first and foremost promote the rapid introduction of AI into the labor market – even more so than the ministries of labor. Most strikingly, three out of the ten articles from Die Welt do not refer to any other term. The newspaper heavily emphasizes the term “beneficence” (Die Welt 1, 6, 7).

Die Welt refers to the term “beneficence” in the sense that AI will replace jobs that “are not for people who are out to be thanked for” (Die Welt 6 p.2). Additionally, titles: “AI can take over boring jobs” (Die Welt 2, p.1). This way, die Welt, tries to sell AI as a liberator. Die Welt also mirrors the language of the German minister for labor by mentioning the same metaphor, “colleague computer” right in the title (Die Welt 5, p.1).

The newspaper also refers to the possibilities of AI to make work more efficient and to its usefulness in the school system (die Welt 1,4, Die Welt 5). Its states: “It must be clarified how a meaningful and equitable use of an AI in the classroom can look like” (die Welt, 5 p.1). In addition, it is discussed as a possible remedy to Germany’s labor shortage situation (Die Welt 7).

Conversely, die Taz and die Zeit are more critical of such “beneficial” implementations; the term “beneficence” is less frequently used proportionally to the other two newspapers.

The term is still being used but in other contexts. For example, die Taz mentions the usefulness of AI in advancing medical technology (Taz 1,2).

With these ideas, die Taz differs from the other newspapers by focusing more on the potential humanistic benefits of such technologies, contrasting usual ideas such as the enhancement of

economic growth and chances for an alleviation of the labor market that is often being mentioned by the other actors.

In addition, the term is often used in the same sentence as the risks of AI. For example, die Taz calls the collaboration between machines and humans “as fruitful as dangerous” (Taz 3, p.1). In this way, these newspapers present a more balanced view.

Contrary to what the analysis of the governmental side has shown, the term “non-maleficence” is referred to 131 times, way more than all other terms. This immense discussion of the term reflects the often-moaned skepticism within the German population with regard to the introduction of new technologies mentioned in section 3.1 of this thesis.

However, this term is also not proportionally distributed across the newspapers. While referring to the term “non-maleficence,” the underlying ideological differences of the newspapers are shown the most. Similarly, as with the Welt and the term “beneficence”, some articles of die Zeit and die Taz discuss only possible maleficent issues of AI (Die Zeit 1, 2, Taz 4).

Die Taz also directly points out the possible negative consequences and challenges of the rapid transformation envisioned by the labor ministries. For example, it is titled: “Risks of AI - this is all too fast” (Die Taz 1, p.1). In the same manner, die Zeit titles: “Wissing demands rapid EU-regulation regarding the usage of AI” (die Zeit 10, p.1). This directly contradicts the German vision of rapidly introducing AI into German society.

On the other hand, in the rare instances in which the term is referred to by the Welt it is in the context of warnings of disinformation through AI (Welt 1,2) and the overuse of AI text generators in schools (Welt 5). None of these issues have a social relation or contradict the government's wording. The FAZ discusses possible social issues – the potential of loss of labor through AI; it titles: “Many employees fear the loss of their job” (FAZ 1, p.). Luckily, in the same article, it calls this fear “total nonsense,” citing Yasmin Fahimi, the boss of the DGB (German Association of labor unions) (FAZ 1 p. 2). This way, the newspaper sends the message to employees that they do not need to worry, further emphasizing the positive effects of a rapid AI implementation.

However, the two other left-leaning newspaper articles represent a range of social issues that could emerge with the profound establishment of AI in the labor market.

The issues they refer to are a possible arms race of AI technology (Die Zeit 2), the potential of AI to control employees (Die Zeit 3,10), fears of encroaching one’s private sphere (Die Zeit 4) dependencies on China and America or data manipulation (Die Zeit 7).

In addition to those concerns, die Taz also mentions the spread of false information (Taz 1), the unpredictability of such technology, issues of discrimination, and a potential rise of inequalities in the labor market (Taz 4, Taz 7, Taz 9). One article also directly points to China as an example of what dangers this new technology yields (Taz 10).

This warning extreme consequences of the integration of AI into society is mirrored by die Zeit. It titles: “the dehumanization of the Workplace” (die Zeit 7, p.1) while depicts an empty chair in the title

photo; the difference between the wording “colleague computer” and this bleak scenario shows the huge disparity between these two newspapers and the die Welt the best.

The same trend can be observed regarding the term “autonomy”. The term does not get referred to either in die Welt or in FAZ. In the samples, zero passages could be found where the term was referred to. Again, in the left leaning media, the term gets referred to more. In Die Zeit the term gets referred to twice, in the context of changes in the labor market. In the newspaper, it is stated that humans must remain at the center of future work, and in another instance that humans must not lose their power to decide on machines in the labor market (Zeit 5,7).

Similarly, possible issues related to the term “Justice” do not get referred to in the Welt. The same goes for the FAZ. In the sample size of both newspapers, no text passages related to the term could be found.

Again, the ideological differences show. Die Zeit refers to issues of discrimination for example, that AI needs to be fair to all it affects (Issue of discrimination) (Zeit 3).

The Taz, on the other hand, discusses these issues extensively. It is pretty salient here. Aspects mentioned in the newspaper are the responsibility that these technologies need to be produced with society in mind (Taz 1). Contrary to the other newspapers die Taz expresses concerns about jobs that might not be replaceable: “AI won’t be a magic wand to replace skilled workers” (Taz 3 p.4).

A few other concerns are mentioned in relation to the “cyber valley” to be founded in Baden-Württemberg, concerns about rising living costs and the independencies of science among issues of inequities between employers and employees (Taz 4,9). It also is the only newspaper in which potential new inequalities in the job market are discussed: “One expert opinion sees a danger of creating new inequalities and reinforcing old ones.” (Taz 7, p.1).

Similarly, as observed in the ministries' policies, what is understood under the term explicability varies. What is surprising is that in no articles was the term “AI” itself explained. Even more surprising is that the term gets less mentioned in the newspapers than in the policy documents of the ministries.

Still, some instances could be found. In the Welt the term gets mentioned in the context of having clear guidelines to use the technology to drive forward society, for example, in schools. (Welt 5). In another instance, the term gets mentioned in the context of fostering its intelligibility for companies to enhance productivity (Welt 10); this mirrors the language of the governmental side.

Again, the left leaning newspapers mentioned the term more. In the FAZ the term gets mentioned once with regard to possible concerns of transparencies when it comes to the manipulation of images (FAZ 4).

In The Taz the term gets mentioned the most often. The term gets mentioned with regard to issues of manipulation with chatbots where we could not determine the originality of the text (Taz 1).

Additionally, it criticizes transparency issues if AI gets utilized by big companies (Taz 4).

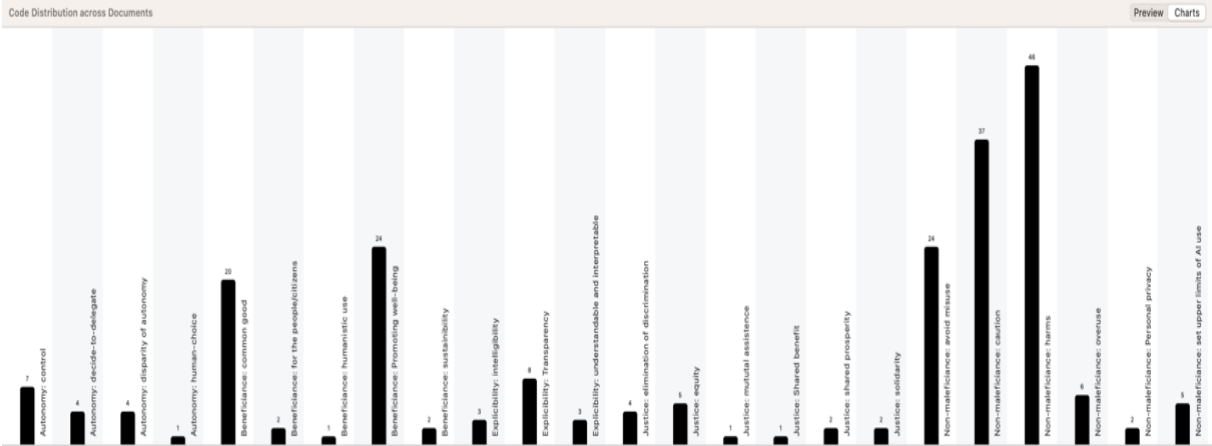


Figure 6 Code distribution of the newspaper articles

4.5 Conclusions

In this section, the answers to the sub questions will be given.

Regarding the first sub question, the German government presents AI as an inevitable introduction into the labor market which will boost Germany’s well-being if the technology is made explicible to SMEs. For people that the introduction of AI might unjustly treat, the BMAS refers to Germany’s robust welfare system (“justice”).

It is questionable whether this approach will make it understandable to the employee in what ways this technology will concretely influence his or her workplace (“explicability”).

From the analysis, it can be inferred that the BMAS plans to bring prosperity to society by making the technology rapidly available to Germany’s SMEs.

Regarding the second sub question, the analysis has shown that the FSLM mirrors the weighting of the five principles shown in the BMAS. However, regional differences exist where the respective ministry senses the opportunity to use AI. In the same way as the BMAS, the FSML present the technology mostly as a beneficial force. A heavier emphasis is laid on fostering the federal state’s economic competence than on integrating it as a tool to fight social inequalities. Federalism seems to be well alive in Germany when it comes to introducing new technologies, however, significant deviations from the narrative of the BMAS could not be found.

Regarding the last sub question, the results show that the newspapers do not oppose the labor ministries' vision to rapidly introduce AI into the labor market as a whole and see their role more in discussing its possible consequences. However, the results also show that the newspapers with a conservative bias promote AI similarly and even more drastically as a benevolent force for society as

the labor ministries do. They try to make the new technologies appetizing for the people through their wording.

The left leaning media, on the other hand mention the social aspects of AI more. They also discuss possible maleficent uses of AI way more extensively.

Political leanings still play a role with regard to introducing AI into the labor market.

5 Conclusion

5.1 Answer to the Research Question

The aim of this thesis was to gain insights into how the German government and the media refer to ethical implementation issues regarding the introduction of AI into the labor market.

This was done through the scope of the ethical framework created by Floridi and Cowls.

The analysis has shown that the BMAS focuses heavily on the term “beneficence” and downplays potential negative social issues that could arise from introducing AI into the labor market.

Furthermore, they do so by using positive imaginaries.³

This is shown by the fact that in the analyzed documents, the BMAS refers to the term “beneficence” by far the most. The other terms “non-maleficence,” “autonomy,” “justice,” and “explicability” were all referred to less.

This approach does not differ in the sample of the FSMLs. However, federalism seems to still be vivid even when it comes to such questions as introducing new technologies into society.

This is shown quantitatively by how many documents could be retrieved from the website of the FSMLs and qualitatively by the different wordings of the ministries.

From the results of the analysis, I argue that the German government refers to ethical principles in such a way that it fits their political goal, which is a rapid introduction of AI into the labor market to ensure a continuation of economic growth and the ability to stay competitive by making AI explicable to big companies and SMEs. This way, the German government tries to get its industry involved into the development of AI. This theoretical expectation could be confirmed.

In referring to ethical principles for a good AI society, they brace the German population for a swift introduction of AI into the labor market and is therefore neglecting concrete social issues that may arise with this introduction.

In the German newspaper coverage, the focus of the discourse is laid on discussing possible negative consequences of this swift implementation. However, this depends on the political leaning of the newspaper. It could be shown that the conservative, more economy-friendly newspaper had a more positive outlook on the introduction.

Ideology still seems to play a role in how the introduction of AI into the labor market is viewed from an ethical standpoint.

in this sense, a plurality of focal points regarding ethical issues could be observed.

Still, what can be observed is that even in the newspapers, the terms “autonomy,” “non-maleficence,” and “explicability” got referred to less.

³ For example “AI-ecosystem”

The results show that the newspapers also do not sufficiently discuss concrete social consequences of this introduction.

5.2 Scientific Discussion

This thesis has generated new insights into how the German government, on the one hand, and the media, on the other, discuss the future implementation of AI through the scope of a scientific ethical framework.

The framework has proven to be very useful in illuminating in what ways the German government refers to these issues.

This gave interesting insights into which ethical issues are discussed by the two sides and which were not.

Köstler and Ossewaarde showed in their analysis implies that the German envisioning of AI is steered by corporate interests (Köstler 2022). This could be confirmed in this study. What is different in this study is that it illuminates how this affects the way the German government refers to ethical issues. First and foremost, the German government displays the beneficence of this new technology and enables its use for German companies and SMEs. To achieve this, they discuss ethical issues in such a way that supports this policy. This is also in line with the findings of Köstler. However, on a closer look at their reference to possible ethical implication issues, the results show that the analyzed German newspapers do not form a unit but instead refer to different ethical aspects depending on the political leaning.

From the sample analysis, it could be concluded that the German newspapers do not display ways that deviate heavily from the traditional approach of the German government. This is also in line with the findings of Köstler and Ossewaarde.

Schiff mentions that evidence of a significant shift from the paradigm of traditional innovation policymaking to a paradigm of transformative innovation policymaking is currently limited in the US (Schiff, 2023). In this thesis, this could be confirmed in the case of Germany. In the sample, many typical elements of the traditional innovation policymaking paradigm, such as supporting SMEs and aligning academic, industry, and public sector activity, could be found.

Deviations that are not typical of such an approach could rarely be found.

The FSMLs follow this line of the government to a great extent (some more, some less).

In addition, the thesis agrees with the observations of Jobin et al. The German federal states try to implement AI in a way that is the most adequate to their state and in their way. The thesis elaborated on this.

I encourage future researchers to apply the same framework or similar ones for their analysis.

Future research could look at different fields where AI implementation will have great effects on the people, such as the field of education, policing etc.

It also would be interesting to analyze the discourse in different countries or on the EU level with the same framework.

Since the coding and extraction were only done by one coder and the data was limited due to time constraints and the discovery that many FSMLs did not have appropriate data, further research is necessary to confirm the validity and representability of the results.

5.3 Practical Implications

For policymakers and stakeholders of AI policies in particular, the thesis gave insights into some important questions they may have, for example, to what extent ethical questions are referred to in political and media discourse in Germany.

It has shown that the introduction of AI into the labor market with its ambiguous consequences is not only planned to be rapid but that many ethical concerns are not referred to the extent that they need to be to not lead to concerns in the working population.

A rapid introduction of AI into the German labor market brings naturally with-it accelerated issues of social justice.

It is, therefore, crucial to address all ethical concerns to the extent that is satisfactory to everyone affected. So far, the German government sees the usage of AI first and foremost in fostering the competitiveness of its SMEs. Here, the German government should become more active in addressing more ethical concerns.

Furthermore, the FSMLs on which websites no document could be retrieved should become more active.

It should be in these ministries where ethical concerns are openly discussed and addressed. Not all FSMLs do so sufficiently.

A second recommendation is that the ministries and newspapers need to be more concrete in what ways AI transforms the labor market and what consequences it may have for the ordinary citizen.

In the end, it is the task of governing institutions to prove their sincerity and credibility for accompanying an implementation of AI into the labor market, not only on paper via strategic framing, but, also through their actions.

6 References

- Cath, C. (2018). Governing artificial intelligence: ethical, legal and technical opportunities and challenges. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2133). <https://doi.org/10.1098/rsta.2018.0080>
- Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2017). Artificial Intelligence and the ‘Good Society’: the US, EU, and UK approach. *Science and Engineering Ethics*. <https://doi.org/10.1007/s11948-017-9901-7>
- Floridi, L., & Cowls, J. (2019). A Unified Framework of Five Principles for AI in Society. *Harvard Data Science Review*. <https://doi.org/10.1162/99608f92.8cd550d1>
- Hsieh, H., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Given, L. M. (2008). *The SAGE Encyclopedia of Qualitative Research Methods (Vol. 2)*. SAGE publications.
- Jobin, A. (2021, October 28). AI Federalism: Shaping AI Policy within States in Germany. *arXiv.org*. <https://arxiv.org/abs/2111.04454>
- Jobin, A., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1(9), 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
- Klinova, K., & Korinek, A. (2021). AI and Shared Prosperity. <https://doi.org/10.1145/3461702.3462619>
- Köstler, L., & Ossewaarde, M. R. (2021). The making of AI society: AI futures frames in German political and media discourses. *AI & Society*, 37(1), 249–263. <https://doi.org/10.1007/s00146-021-01161-9>
- Mayring, P. A. (2023). Qualitative content analysis. In Elsevier eBooks (pp. 314–322). <https://doi.org/10.1016/b978-0-12-818630-5.11031-0>
- Schiff, D. (2023). Looking through a policy window with tinted glasses: Setting the agenda for U.S. AI policy. *Review of Policy Research*. <https://doi.org/10.1111/ropr.12535>
- Ulicane, I. (2022). Emerging technology for economic competitiveness or societal challenges? Framing purpose in Artificial Intelligence policy. *Global Public Policy and Governance*, 2(3), 326–345. <https://doi.org/10.1007/s43508-022-00049-8>

- Ulnicane, I. (2023, January 30). Governance, politics & policy of Artificial Intelligence II - Ethics Dialogues. Ethics Dialogues. <https://www.ethicsdialogues.eu/2023/01/30/governance-politics-policy-of-artificial-intelligence-ii/>
- Vallance, B. C. (2023, March 28). AI could replace equivalent of 300 million jobs - report. BBC News. Retrieved May 28, 2023, from <https://www.bbc.com/news/technology-65102150>.
- Vesnic-Alujevic, L., Nascimento, S., & Pólvara, A. (2020). Societal and ethical impacts of artificial intelligence: Critical notes on European policy frameworks. *Telecommunications Policy*, 44(6), 101961. <https://doi.org/10.1016/j.telpol.2020.101961>

Appendix

Documents

Documents retrieved from the BMAS (Federal Ministry of Labor and Social Affairs)

- BMAS. (2018a, August 6). Mit Qualifizierung die Arbeit von morgen sichern. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Reden/Hubertus-Heil/2018/2018-08-07-faz.html>
- BMAS. (2018b, September 20). “Digitaler Wandel eröffnet Chancen.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2018/digitale-plattform.html>
- BMAS. (2019a, November 15). BMAS - Ein Jahr Strategie Künstliche Intelligenz der Bundesregierung. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Pressemitteilungen/2019/ein-jahr-ki-strategie.html>
- BMAS. (2019b, November 26). Themenräume. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Arbeit/Digitalisierung-der-Arbeitswelt/Arbeiten-vier-null/themenraeume.html>
- BMAS. (2020, February 19). EU-Kommission stellt Weißbuch zu Künstlicher Intelligenz vor. [Press release]. www.bmas.de. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2020/eu-kommission-stellt-ki-weissbuch-vor.html>
- BMAS. (2021a, March 3). [Press release]. Ein Jahr KI-Observatorium. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2021/ein-jahr-ki-observatorium.html>
- BMAS. (2021b, March 10). [Press release]. Erste Preisverleihung der Civic Innovation Platform. Retrieved May 18, 2023,

from <https://www.bmas.de/DE/Service/Presse/Meldungen/2021/erste-preisverleihung-der-civic-innovation-platform.html>

BMAS. (2021c, March 31). Betriebsrätemodernisierungsgesetz. [Press release]. Retrieved May 18, 2023 from <https://www.bmas.de/DE/Service/Gesetze-und-Gesetzesvorhaben/betriebsraetemodernisierungsgesetz.html>

BMAS. (2021d, July 7). Konferenz zu “Algorithmen, Automatisierung und Arbeit.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2021/konferenz-zu-algorithmen-automatisierung-und-arbeit.html>

BMAS. (2022a, January 21). BMAS veröffentlicht Ergebnisse des unabhängigen, interdisziplinären Beirats zum Beschäftigtendatenschutz. www.bmas.de. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2022/bmas-veroeffentlicht-ergebnisse-des-beirats-zum-beschaefigtendatenschutz.html#:~:text=Am%2017.,Soziales%2C%20Hubertus%20Heil%2C%20%20C3%BCbergeben.>

BMAS. (2022b, February 23). OECD-Konferenz zu Künstlicher Intelligenz. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2022/oecd-konferenz-kuenstliche-intelligenz.html>

BMAS. (2022c, April 25). Aktionswochen Fachkräftesicherung. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2022/aktionswochen-fachkraeftesicherung.html#:~:text=Die%20diesj%C3%A4hrigen%20Aktionswochen%20%22Menschen%20in,f%C3%BCr%20ihre%20Veranstaltungen%20zur%20Fachkr%C3%A4ftesicherung.>

BMAS. (2022d, June 3). Tschan und Heil auf der re:publica. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Meldungen/2022/tschan-und-heil-auf-der-republica.html>

BMAS. (2022e, October 14). Civic Coding – KI für das Gemeinwohl nutzen. [Press release]. Retrieved May 18, 2023,

- from <https://www.bmas.de/DE/Service/Presse/Meldungen/2022/civic-coding-ki-fuer-das-gemeinwohl-nutzen.html>
- BMAS. (2022f, October 18). Mit Künstlicher Intelligenz das Gemeinwohl fördern. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Pressemitteilungen/2022/mit-kuenstlicher-intelligenz-das-gemeinwohl-foerdern.html>
- BMAS. (2022g, November). Selbstverpflichtende Leitlinien für den KI-Einsatz in der behördlichen Praxis der Arbeits- und Sozialverwaltung. [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Publikationen/Broschueren/a862-leitlinien-ki-einsatz-behoerdliche-praxis-arbeits-sozialverwaltung.html>
- BMAS. (2022h, November 15). “Innovative Kompetenzentwicklung ist entscheidend für eine erfolgreiche Zukunftsgestaltung.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Pressemitteilungen/2022/jahrestagung-2022-zukunftszentren.html>
- BMAS. (2022i, December 13). “Innovationen machen uns stark für die Zukunft.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Reden/Hubertus-Heil/2022/2022-12-13-rede-preisverleihung-werner-von-siemens-ring.html>
- BMAS. (2023a, March 6). BMAS - ESF Plus-Programm “Zukunftszentren.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Arbeit/Digitalisierung-der-Arbeitswelt/Austausch-mit-der-betrieblichen-Praxis/Zukunftszentren/zukunftszentren-art.html#:~:text=Mit%20dem%20ESF%20Plus%2DProgramm,in%20den%20Regionen%20gut%20aufgestellt.>
- BMAS. (2023b, April 29). “Künstliche Intelligenz wird den Arbeitsmarkt rasant verändern.” [Press release]. Retrieved May 18, 2023, from <https://www.bmas.de/DE/Service/Presse/Interviews/2023/2023-04-29-tagesspiegel.html>

Documents retrieved from the federal state's ministries of labor

Bayerisches Staatsministerium für Familie, Arbeit und Soziales. (2021, September). Zwischenbericht der Facharbeitsgruppe „Kita 2050“. Retrieved May 18, 2023,

from https://www.stmas.bayern.de/imperia/md/content/stmas/stmas_inet/1210-021319_gestaltung_zwischenbericht_kita2050_bf.pdf

Behörde für Wirtschaft und Innovation. (n.d.). Künstliche Intelligenz in der Verwaltung. [Press release]. Retrieved May 18, 2023, from <https://www.hamburg.de/bwi/newsletter-alles-im-fluss/16998850/ki-workshops/>

Behörde für Wirtschaft und Innovation Hamburg. (n.d.). Künstliche Intelligenz in der Logistik. [Press release]. Retrieved May 18, 2023, from <https://www.hamburg.de/bwi/newsletter-alles-im-fluss/16811024/hhla-ki/>

Ministerium für Arbeit, Gesundheit und Soziales des Landes Nordrhein-Westfalen. (2018a, May 9). Beschäftigte und Unternehmen durch Digitalisierung stärken. [Press release]. Retrieved May 18, 2023, from <https://www.mags.nrw/pressemitteilung/beschaeftigte-und-unternehmen-durch-digitalisierung-staerken>

Ministerium für Arbeit, Gesundheit und Soziales des Landes Nordrhein-Westfalen. (2018b, September 27). Arbeitsminister Laumann: “Wir werden nicht locker lassen im Kampf gegen Schwarzarbeit!” [Press release]. Retrieved May 18, 2023, from <https://www.mags.nrw/veranstaltung-gegen-schwarzarbeit>

Ministerium für Arbeit, Soziales, Transformation und Digitalisierung. (2020, September 12). Wissing / Bätzing-Lichtenthäler: Erfolg im KI-Förderwettbewerb. [Press release]. Retrieved May 18, 2023, from <https://mastd.rlp.de/service/presse/detail/wissing-/-baetzing-lichtenthaeler-erfolg-im-ki-foerderwettbewerb>

Ministerium für Arbeit, Soziales, Transformation und Digitalisierung. (2021a, July 10). Dialog mit Beschäftigungsbeirat: Rheinland-Pfalz gestaltet Transformation gemeinsam. [Press release]. Retrieved May 18, 2023, from <https://mastd.rlp.de/service/presse/detail/dialog-mit-beschaefigungsbeirat-rheinland-pfalz-gestaltet-transformation-gemeinsam>

Ministerium für Arbeit, Soziales, Transformation und Digitalisierung. (2021b, December 8). Arbeits- und Transformationsminister Alexander Schweitzer im Dialog. [Press release]. Retrieved May 18, 2023, from <https://mastd.rlp.de/service/presse/detail/arbeits-und-transformationsminister-alexander-schweitzer-im-dialog>

Ministerium für Arbeit, Soziales, Transformation und Digitalisierung. (2022a, May 31). Arbeitslosigkeit sinkt im Mai - Dreyer/Schweitzer: Land bündelt Angebote, um Gestaltung der Transformation zu unterstützen. [Press release]. Retrieved May 18, 2023, from <https://mastd.rlp.de/service/presse/detail/arbeitslosigkeit-sinkt-im-mai-dreyer/schweitzer-land-buendelt-angebote-um-gestaltung-der-transformation-zu-unterstuetzen>

Ministerium für Arbeit, Soziales, Transformation und Digitalisierung. (2022b, July 22). Tour durch Rheinland-Pfalz: Minister Alexander Schweitzer informiert sich über Projekte der Digitalisierung. [Press release]. Retrieved May 18, 2023, from <https://mastd.rlp.de/service/presse/detail/tour-durch-rheinland-pfalz-minister-alexander-schweitzer-informiert-sich-ueber-projekte-der-digitalisierung>

Ministerium für Wirtschaft, Arbeit und Energie (MWE). (2019, December 4). Brandenburger KI-Konferenz “Künstliche Intelligenz ist jetzt” [Press release]. Retrieved May 18, 2023, from <https://digitalesbb.de/2019/11/06/brandenburger-ki-konferenz-ki-ist-jetzt/>

Ministerium für Wirtschaft, Arbeit und Energie (MWE). (2022a, February 28). Künstliche Intelligenz für brandenburgische Unternehmen. [Press release]. Retrieved May 18, 2023, from <https://mwae.brandenburg.de/de/k%C3%BCnstliche-intelligenz-f%C3%BCr-brandenburgische-unternehmen/bb1.c.732301.de>

Ministerium für Wirtschaft, Arbeit und Energie (MWE). (2022b, August 12). Forschungsdatenstrategie für Brandenburg. [Press release]. Retrieved May 18, 2023, from <https://digitalesbb.de/2022/08/12/forschungsdatenstrategie-fuer-brandenburg/>

Ministerium für Wirtschaft, Arbeit und Energie (MWE). (2022c, August 12). Studiengang Digitale Gesellschaft geht an den Start. [Press release]. Retrieved May 18, 2023, from <https://digitalesbb.de/2022/08/12/studiengang-digitale-gesellschaft-geht-an-den-start/>

Ministerium für Wirtschaft, Arbeit und Energie (MWE). (2022d, August 27). Potenziale der Künstlichen Intelligenz nutzen. [Press release]. Retrieved May 18, 2023, from <https://digitalesbb.de/2019/12/19/chancen-der-ki-nutzen/>

Ministerium für Wirtschaft, Arbeit und Tourismus Baden-Württemberg. (2023a, January 19). THE CREÄTIVE HOUSE: Die neue Welt der Künstlichen Intelligenz im „KI-Salon“ erleben. [Press release]. Retrieved May 18, 2023, from <https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/the-creactive-house-die-neue-welt-der-kuenstlichen-intelligenz-im-ki-salon-erleben>

Ministerium für Wirtschaft, Arbeit und Tourismus Baden-Württemberg. (2023b, January 24). Drei Einrichtungen aus Baden-Württemberg werden Teil eines europäischen Netzwerks für Künstliche Intelligenz (KI) in der Produktion. [Press release]. Retrieved May 18, 2023, from <https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/drei-einrichtungen-aus-baden-wuerttemberg-werden-teil-eines-europaeischen-netzwerks-fuer-kuenstliche-intelligenz-ki-in-der-produktion#:~:text=Ein%20Konsortium%20aus%20Baden%2DW%C3%BCrtemberg,rund%203%2C95%20Millionen%20Euro.>

Ministerium für Wirtschaft, Arbeit und Tourismus Baden-Württemberg. (2023c, February 5). Wirtschaftsministerin Hoffmeister-Kraut reist mit einer 50-köpfigen Delegation in die Niederlande. [Press release]. Retrieved May 18, 2023, from <https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/wirtschaftsministerin-hoffmeister-kraut-reist-mit-einer-50-koepfigen-delegation-in-die-niederlande>

Ministerium für Wirtschaft, Arbeit und Tourismus Baden-Württemberg. (2023, May 20). Konsortium aus Baden-Württemberg erhält rund 7,9 Millionen Euro für Test- und Erprobungszentrum für KI in der Produktion. [Press release]. Retrieved May 18, 2023, from <https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/konsortium-aus-baden-wuerttemberg-erhaelt-rund-79-millionen-euro-fuer-test-und-erprobungszentrum-fuer-ki-in-der-produktion>

Ministerium für Wirtschaft, Arbeit und Tourismus Baden-Württemberg. (2023d, October 5). Land fördert regionales KI-Exzellenzzentrum. [Press release]. Retrieved May 18, 2023,

from [https://wm.baden-wuerttemberg.de/de/service/presse-und-](https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/land-foerdert-regionales-ki-exzellenzzentrum)

[oeffentlichkeitsarbeit/pressemitteilung/pid/land-foerdert-regionales-ki-exzellenzzentrum](https://wm.baden-wuerttemberg.de/de/service/presse-und-oeffentlichkeitsarbeit/pressemitteilung/pid/land-foerdert-regionales-ki-exzellenzzentrum)

Sächsisches Staatsministerium für Wirtschaft, Arbeit und Verkehr. (2019, September 5). Martin

Duldig: »Was jetzt zu tun ist – in der Zeitenwende Unternehmen und Arbeitsplätze in Sachsen zukunftsfest gestalten«. [Press release]. Retrieved May 18, 2023,

from <https://www.medienservice.sachsen.de/medien/news/1044327>

Sächsisches Staatsministerium für Wirtschaft, Arbeit und Verkehr. (2023, January 24). Neue

Digitalstrategie des Freistaats Sachsen verabschiedet. [Press release]. Retrieved May 18,

2023, from [https://www.smwa.sachsen.de/blog/2023/01/24/neue-digitalstrategie-des-](https://www.smwa.sachsen.de/blog/2023/01/24/neue-digitalstrategie-des-freistaats-sachsen-verabschiedet/#)

[freistaats-sachsen-verabschiedet/#](https://www.smwa.sachsen.de/blog/2023/01/24/neue-digitalstrategie-des-freistaats-sachsen-verabschiedet/#)

Senatskanzlei Hamburg. (2018a, October 12). Künstliche Intelligenz in der Verwaltung. [Press

release]. Retrieved May 18, 2023, from [https://www.hamburg.de/pressearchiv-](https://www.hamburg.de/pressearchiv-fhh/11707596/2018-10-12-pr-kuenstliche-intelligenz-verwaltung/)

[fhh/11707596/2018-10-12-pr-kuenstliche-intelligenz-verwaltung/](https://www.hamburg.de/pressearchiv-fhh/11707596/2018-10-12-pr-kuenstliche-intelligenz-verwaltung/)

Senatskanzlei Hamburg. (2018b, October 12). Senatsempfang „Künstliche Intelligenz in der

Verwaltung“. [Press release]. [hamburg.de](https://www.hamburg.de). Retrieved May 18, 2023,

from [https://www.hamburg.de/buergermeisterreden-2018-2/11708906/kuenstliche-intelligenz-](https://www.hamburg.de/buergermeisterreden-2018-2/11708906/kuenstliche-intelligenz-verwaltung/)
[verwaltung/](https://www.hamburg.de/buergermeisterreden-2018-2/11708906/kuenstliche-intelligenz-verwaltung/)

Senatskanzlei Hamburg. (2023, April 25). Künstliche Intelligenz in der Verwaltung. [Press release].

Retrieved May 18, 2023, from [https://www.hamburg.de/pressearchiv-fhh/17081876/2023-04-](https://www.hamburg.de/pressearchiv-fhh/17081876/2023-04-25-sk-kuenstliche-intelligenz-in-verwaltung-hamburg-und-aric-vereinbaren-zusammenarbeit-im-bereich-startups/)

[25-sk-kuenstliche-intelligenz-in-verwaltung-hamburg-und-aric-vereinbaren-zusammenarbeit-](https://www.hamburg.de/pressearchiv-fhh/17081876/2023-04-25-sk-kuenstliche-intelligenz-in-verwaltung-hamburg-und-aric-vereinbaren-zusammenarbeit-im-bereich-startups/)
[im-bereich-startups/](https://www.hamburg.de/pressearchiv-fhh/17081876/2023-04-25-sk-kuenstliche-intelligenz-in-verwaltung-hamburg-und-aric-vereinbaren-zusammenarbeit-im-bereich-startups/)

Senatsverwaltung für Arbeit, Soziales, Gleichstellung, Integration, Vielfalt und Antidiskriminierung.

(n.d.). Digitalisierung und Arbeit 4.0. [Press release]. Retrieved May 18, 2023,

from <https://www.berlin.de/sen/arbeit/top-themen/digitalisierung-und-arbeit-4-0/>

Senatsverwaltung für Arbeit, Soziales, Gleichstellung, Integration, Vielfalt und Antidiskriminierung.

(2021, November 19). Handicap kein Hindernis: Inklusionspreis 2021 für vier vorbildliche

Betriebe. [Press release]. Retrieved May 18, 2023,

from <https://www.berlin.de/sen/ias/presse/pressemitteilungen/2021/pressemitteilung.1148560.php>

Senatsverwaltung für Arbeit, Soziales, Gleichstellung, Integration, Vielfalt und Antidiskriminierung. (2022, August 18). Ausbau des Zukunftszentrums Berlin gesichert. [Press release]. Retrieved May 18, 2023, from <https://www.berlin.de/sen/ias/presse/pressemitteilungen/2022/pressemitteilung.1236412.php>

Staatskanzlei Schleswig Holstein. (2021, February 11). Auftakt im KI-Transfer-Hub. [Press release]. Retrieved May 18, 2023, from https://www.schleswig-holstein.de/DE/landesregierung/ministerien-behoerden/I/_startseite/Artikel2021/I/210211_ki_transfer_hub.htm

Staatskanzlei Schleswig Holstein. (2023, April 14). Künstliche Intelligenz und Energiewende im Blickpunkt: Schleswig-Holstein präsentiert sich ab Montag auf der Hannover Messe. [Press release]. Retrieved May 18, 2023, from https://www.schleswig-holstein.de/DE/landesregierung/ministerien-behoerden/I/Presse/PI/2023/CdS/230414_CdS_HannoverMesse.html

Staatskanzlei Schleswig-Holstein. (2020, September 3). Künstliche Intelligenz in die Unternehmen bringen: Staatssekretär Schrödter eröffnet Veranstaltung “KI – aber konkret!” in Lübeck. [Press release]. Retrieved May 18, 2023, from https://www.schleswig-holstein.de/DE/landesregierung/ministerien-behoerden/I/_startseite/Artikel2020/III/200903_cds_ki_konkret.html

Staatskanzlei Schleswig-Holstein. (2022, April 6). In Leichter Sprache: Künstliche Intelligenz in Schleswig-Holstein. Retrieved May 18, 2023, from https://www.schleswig-holstein.de/DE/landesregierung/themen/digitalisierung/kuenstliche-intelligenz/_documents/leichte_sprache_kuenstliche_intelligenz.html

Staatskanzlei Schleswig-Holstein. (2023, March 9). Künstliche Intelligenz für den Maschinen- und Anlagenbau: Land unterstützt Forschungsprojekt in Kiel – Förderbescheid überreicht. [Press release]. Retrieved May 18, 2023, from <https://www.schleswig->

holstein.de/DE/landesregierung/ministerien-
behoerden/I/Presse/PI/2023/CdS/230309_CdS_foerderbescheid_gewinderollen.html

Thüringer Ministerium für Arbeit, Soziales, Gesundheit, Frauen und Familie. (2022, September 6). Jahresbericht der Thüringer Arbeitsschutzbehörden 2021 veröffentlicht. [Press release]. Retrieved May 18, 2023, from <https://www.tmasgff.de/medienservice/artikel/jahresbericht-der-thueringer-arbeitsschutzbehoerden-2021-veroeffentlicht>

Thüringer Ministerium für Arbeit, Soziales, Gesundheit, Frauen und Familie. (2023, April 18). Thüringer Sozialministerium ist Partner im „Digital Pakt Alter“. [Press release]. Retrieved May 18, 2023, from <https://www.tmasgff.de/medienservice/artikel/thueringer-sozialministerium-ist-partner-im-digital-pakt-alter#:~:text=Im%20brandenburgischen%20Falkensee%20fiel%20am,Alter%E2%80%9C%20von%202023%20bis%202025.>

Newspaper articles

Arbeitsmarkt steht laut Weltwirtschaftsforum vor großen Veränderungen. (2023, May 1). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/arbeit/2023-05/arbeitsmarkt-umwaelzung-zukunft->

jobs#:~:text=Innerhalb%20von%20f%C3%BCnf%20Jahren%20wird,ver%C3%A4ndern%2C%20andere%20sogar%20vollst%C3%A4ndig%20verschwinden.

Arbeitsminister Heil gegen Verbot von ChatGPT. (2023, April 29). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/digital/2023-04/kuenstliche-intelligenz-chatgpt-hubertus-heil-verbot>

Balke, F. (2023, April 30). Lyrikstage Frankfurt: Kommt ins offene Feld. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/feuilleton/buecher/die-lyrikstage-frankfurt-2023-kommt-ins-offene-feld-18926969.html>

BCG-Studie: Viele Beschäftigte fürchten Job-Verlust durch KI. (2023, June 7). FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/wirtschaft/digitec/ki-als-bedrohung-viele-beschaefigte-fuerchten-laut-studie-job-verlust-18947560.html>

- Belghaus, N. (2023, April 17). Risiken von KI: „Alles geht zu schnell“. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Risiken-von-KI/!5923244/>
- Berufsschullehrer fordern Bildungsgipfel zu KI. (2023, March 3). DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/regionales/rheinland-pfalz-saarland/article244059787/Berufsschullehrer-fordern-Bildungsgipfel-zu-KI.html?icid=search.product.onsite-search>
- Bock, O. B. (2023, May 26). Bildungsgruppe Fresenius: KI und VR verändern die Welt. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/rhein-main/region-und-hessen/festakt-zu-175-jahre-bildungsgruppe-fresenius-in-wiesbaden-18919712/vordenker-ludwig-fresenius-18919711.html>
- Chef des ChatGPT-Erfinders OpenAI fordert KI-Regulierung. (2023, May 16). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/digital/2023-05/kuenstliche-intelligent-chatgpt-regulierung-sam-altman#:~:text=Der%20Chef%20des%20ChatGPT%20Erfinders,einer%20Anh%C3%B6rung%20im%20US%20Senat.>
- Dribbusch, B. (2022, April 28). Digitale Transformation der Arbeitswelt: „Mismatch“ auf dem Jobmarkt. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Digitale-Transformation-der-Arbeitswelt/!5851379/>
- Driessen, C. (2023, March 26). Haus der Geschichte in Bonn: Wenn Tastenhandys und 20-Kilo-Computer nostalgische Gefühle wecken. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/geschichte/article244454514/Haus-der-Geschichte-in-Bonn-Wenn-Tastenhandys-und-20-Kilo-Computer-nostalgische-Gefuehle-wecken.html#:~:text=Geschichte%20in%20Bonn-,Wenn%20Tastenhandys%20und%2020%2DKilo%2DComputer%20nostalgische%20Gef%C3%BChle%20wecken,in%20einer%20Lebensspanne%20Wirklichkeit%20geworden.>
- Ebbinghaus, U. E. (2023a, May 21). Interview mit Bob Blume: Eine Umwälzung wird so oder so stattfinden. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/karriere-hochschule/bob-blume-im-gespraech-ueber-chatgpt-in-der-schule-18904325.html#:~:text=Eine%20Umw%C3%A4lzung%20wird%20so%20oder%20so%20stat>

finden&text=In%20Deutsch%20und%20Geschichte%20erm%C3%B6glicht,sagt%20der%20P%C3%A4dagoge%20Bob%20Blume.

Ebbinghaus, U. E. (2023b, May 23). Interview mit Patrick Bronner: ChatGPT wird die Lernkultur grundlegend verändern. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/karriere-hochschule/klassenzimmer/paedagoge-chatgpt-wird-die-lernkultur-grundlegend-veraendern-18904317.html#:~:text=In%20den%20MINT%2DF%C3%A4chern%20kann,richtigen%20Methodenmix%20komme%20es%20an.&text=Herr%20Bronner%2C%20wie%20setzen%20Sie%20ChatGPT%20in%20der%20Schule%20ein%3F>

Flohr, H. (2023, May 28). Wie KI manipulieren kann: Das ist kein Foto, das sieht nur so aus. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/feuilleton/medien/wie-ki-manipulieren-kann-das-ist-kein-foto-das-sieht-nur-so-aus-18922487.html>

Fründt, S. (2023, January 23). Lufthansa und Google: Jetzt entscheidet eine KI, welcher Flug ausfällt. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/wirtschaft/article243359285/Lufthansa-und-Google-Jetzt-entscheidet-eine-KI-welcher-Flug-ausfaellt.html>

Fuest, B. (2023, May 16). Google stellt Konkurrenz zu ChatGPT vor – das ändert sich jetzt für Nutzer. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/wirtschaft/article245278052/Google-stellt-Konkurrenz-zu-ChatGPT-vor-das-aendert-sich-jetzt-fuer-Nutzer.html#:~:text=Bedienung%20der%20Google%2DSuche%20%C3%A4ndert%20sich%20vollst%C3%A4ndig&text=Nutzer%20zu%20schaffen.-,Mit%20seinem%20Chatbot%20Bard%20will%20Google%20ein%20%C3%A4hnliches%20Produkt%20abliefern,Software%20von%20Googles%20Cloud%20integriert.>

Giessler, D. (2019, November 14). Observatorium für künstliche Intelligenz: Bundesregierung überwacht KI. TAZ Verlags- Und Vertriebs GmbH. Retrieved June 9, 2023, from <https://taz.de/Observatorium-fuer-kuenstliche-Intelligenz!/5642047/>

Google-Chatbot Bard kommt auch nach Europa. (2023, May 12). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/digital/2023-05/kuenstliche-intelligenz-chatbot-bard-google-europa#:~:text=Google%20wird%20seinen%20KI%2DTextroter,wichtig%2C%20sagte%20Konzernchef%20Sundar%20Pichai>.

Haus der Geschichte beleuchtet Digitalisierung. (2023, March 23). DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/regionales/nrw/article244441666/Haus-der-Geschichte-beleuchtet-Digitalisierung.html>

Hollywoodautoren stimmen mit großer Mehrheit für Streiks. (2023, April 18). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/kultur/film/2023-04/hollywood-drehbuchautoren-film-streiks-gewerkschaften>

<https://www.zeit.de/digital/2023-04/digitalisierung-volker-wissing-regulierung-kuenstliche-intelligenz>. (2023, April 16). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/digital/2023-04/digitalisierung-volker-wissing-regulierung-kuenstliche-intelligenz>

Jakob, C. (2023, March 15). Fachkräftemangel in Deutschland:Jenseits von Europa. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Fachkraeftemangel-in-Deutschland/!5816153/>

Kals, U. K. (2023, May 16). Burnout-Gefahr: Jeder Zweite täglich unter Druck. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/karriere-hochschule/burnout-gefahr-jeder-zweite-fuehlt-sich-taeglich-unter-druck-18889893.html>

Kamala Harris drängt Konzerne zum verantwortungsvollen Umgang mit KI. (2023, May 4). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/politik/ausland/2023-05/kamala-harris-ki-google-microsoft-openai>

Keese, C. (2020, November 10). Gedanken werden Wirklichkeit. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/sonderthemen/welt-transformationsgipfel/article219804100/Gedanken-werden-Wirklichkeit.html>

Kretschmer, F. (2021, August 12). Neuer Fünfjahresplan: China will mehr Kontrolle. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Neuer-Fuenfjahresplan/!5788525/>

- Künstliche Intelligenz: Saskia Esken will „langweilige Arbeit“ ersetzen. (2023, April 18). DIE Welt. Retrieved May 22, 2023, from <https://www.welt.de/politik/deutschland/article244834102/Kuenstliche-Intelligenz-Saskia-Esken-will-langweilige-Arbeit-ersetzen.html>
- Lindner, R. (2023, May 30). Vergleich mit Atomkriegen: Künstliche Intelligenz als „Auslöschungsrisiko“ für die Menschheit. FAZ.NET. Retrieved June 7, 2023, from <https://www.faz.net/aktuell/wirtschaft/unternehmen/open-ai-vorstandschef-ki-als-risiko-zur-ausloeschung-der-menschheit-18929453.html#:~:text=Es%20ist%20eine%20drastische%20Warnung,Ausl%C3%B6schungsrisiko%E2%80%9C%20f%C3%BCr%20die%20Menschheit%20darstelle.>
- Posener, A. P. (2023, April 25). Die Entmenschlichung des Arbeitsplatzes. Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/wirtschaft/2023-04/arbeitszeiterfassung-gesetz-kontrolle-produktivitaet>
- Preuß, O. (2020, August 4). IT-Experten: So rekrutieren VW, Bosch und Continental junge Fachkräfte. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/wirtschaft/article212800529/IT-Experten-So-rekrutieren-VW-Bosch-und-Continental-junge-Fachkraefte.html#:~:text=Kein%20Abitur%2C%20keine%20Vorkenntnisse%20%E2%80%93%20Die%20Autobranche%20l%C3%A4sst%20die%20letzten%20H%C3%BCrden%20fallen&text=Von%20Volkswagen%20bis%20Continental%3A%20In,f%C3%BCr%20Bewerber%20immer%20weiter%20gesenkt.>
- Regierung plant Gesetz gegen KI-Überwachung am Arbeitsplatz. (2023, March 12). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/arbeit/2023-05/kuenstliche-intelligenz-arbeitsplatz-nancy-faeser-hubertus-heil>
- Schipkowski, K. (2021, July 2). Arbeitsbedingungen bei VW-Tochter: Sie sollen fahren, nicht pinkeln. TAZ Verlags- Und Vertriebs GmbH. Retrieved June 9, 2023, from <https://taz.de/Arbeitsbedingungen-bei-VW-Tochter/!5783715/>

- Schönherr, H. (2023, March 10). Forschung mit kollaborierenden Robotern: Wenn Roboter Menschen missverstehen. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Forschung-mit-kollaborierenden-Robotern/!5917043/>
- Seipp, B. (2022, July 15). Hotelier des Jahres: Caroline von Kretschmann über neuen Luxus im Hotel. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/reise/deutschland/article239903917/Hotelier-des-Jahres-Caroline-von-Kretschmann-ueber-neuen-Luxus-im-Hotel.html>
- Stiehlt uns die KI die Jobs? (2023, April 16). Zeit Online. Retrieved May 22, 2023, from <https://www.zeit.de/2023/16/jens-suedekum-kuenstliche-intelligenz-arbeitsplaetze-arbeitslosigkeit>
- Whang, O. (2023, April 9). Entwicklung von Künstlicher Intelligenz: Selbstbewusste Roboter. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Entwicklung-von-Kuenstlicher-Intelligenz/!5923251/>
- Wörz, A. (2023, January 9). Ethik für Künstliche Intelligenz: Wo Schwaben Kalifornien sein will. TAZ Verlags- Und Vertriebs GmbH. Retrieved May 22, 2023, from <https://taz.de/Ethik-fuer-Kuenstliche-Intelligenz/!5905840/>
- Zwick, D. (2021, February 20). IT, Software, Digital-Kompetenz: Weiterbildung in der Autoindustrie. DIE WELT. Retrieved May 22, 2023, from <https://www.welt.de/wirtschaft/karriere/bildung/article226703931/IT-Software-Digital-Kompetenz-Weiterbildung-in-der-Autoindustrie.html>