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NEW TYPE OF KNOWLEDGE, NEW TYPE OF POWER – ARTIFICIAL INTELLIGENCE AND THE PROTECTION OF PERSONAL DATA

Doctoral thesis

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1. Introduction

Artificial intelligence (AI) has changed our everyday lives considerably. Its significance can be compared to the emergence of computers and the internet,[1] and similarly to such technologies, AI also makes a variety of tasks easier, while becoming part of our everyday life and by making accessible and processing vast amounts of information. Information also serves as a fuel for AI. Such information may especially include personal data, the mass processing of which may have significant societal and economic value, but such processing may also involve risks and dangers for data subjects.

Based on the above, it is beyond doubt that the use of AI and the processing of personal data by AI solutions must be regulated, bearing in mind that in case of certain industries or activities regarded as crucial in everyday life (such as transportation and healthcare), the irresponsible use of AI can cause significant harm, which may extend beyond human life, health[2] and property to the protection of privacy and personal data. The question arises in this respect, whether a too severe regulation would not necessarily lead to the significant slowdown of technological progress or impede societal or economic development.

Countries and regions around the world – with respect to their own traditions, culture, social and economic development and circumstances – have opted to follow different regulatory approaches. Legislators in the European Union (EU) decided to introduce comprehensive regulation in respect of data protection, online services and AI-systems. In contrast, regulation in the United States (US) tends to focus on critical areas of law, while court practice is also shaping the perception and framework of data processing by AI and other new technologies.

Although the above regulatory approaches all focus on promoting research and development of new technologies and, in many aspects and many times follow a risk-based approach, there are still quite a number of cases where current regulation may result in excessive regulatory intervention or create uncertainty. It is important, however, that rules concerning AI and other new technologies are applied with respect to the given AI-system and technology and the

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[1] NAGY Zoltán András: *Bűncselekmények számítógépes környezetben*, Budapest, Ad Librum, 2009. 6.
[2] TÓTH András: A mesterséges intelligencia szabályozásának paradoxonja és egyes jogi vonatkozásainak alapvető kérdései. *Infokommunikáció és jog*, 73/2020. 3.

specific circumstances of the case and to set realistic and transparent obligations for service providers besides taking into account the interests of the data subjects.

Naturally, it may also be the case that the issues raised in the thesis may not be fully resolved today. In the context of technology regulation, we have already seen that the law often tries to "catch up" with the ever-accelerating pace of technological development, often falling behind. Laws regulating technology may further set out complex requirements which entities covered may misinterpret or misapply, and which are subsequently refined. In case of AI, regulation should also address high hopes concerning the technology and exaggerated fears about its capabilities and potential competition with human reason.[3] Nevertheless, we attempt to explore the effects of the regulation of data processing by AI and other new technologies on technological development and to propose answers and raise relevant new questions with a practical view.

2. Research objectives and subject

It is beyond doubt that AI has had a significant impact on society and economy. Although the pace of technological progress has been accelerating for centuries, there have seldom been times in history when people experienced such rapid changes in everyday life, including the rise of digitalization, as well as the growing social and economic role of AI. Large Language Models and generative AI have also raised the level of social interactions with AI, as well as the awareness around the technology. Law had to react to such technological changes, which resulted in a regulatory frenzy worldwide, including regulators in the EU and the US, which also lead to the creation of a number of key pieces of legislation. Today, however, we still do not know what impact these rules may have on technological development on the long term, and what regulatory approaches would prevail in an increasingly technological environment. Other issues include the potential interplay between AI and data protection regulation in the EU, as well as banned systems and their use or categorization.

Based on the above, the goal of the thesis is to assess the effects of the regulation of data processing by AI on technological progress from a practical viewpoint, to review different approaches of the EU and the US regulation, as well as to identify key issues in practice

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[3] NÉGYESI Imre: *A mesterséges intelligencia és az etika*. Hadtudomány 2020/1. 107.

regarding the protection of personal data, and to make recommendations in this respect, with a particular emphasis on supporting research and development of new technologies and to adequately defend the interests of both service providers and data subjects concerning the provision and use of AI.

3. Thesis statements and related discussions

The purpose of the research has been defined with regard to the following thesis statements:

1. Does the use of AI pose a threat to the protection of personal data, and are such threats adequately addressed by current data protection rules?
2. Does the current EU regulation hold back the development and uptake of AI?
3. Do we need to reconsider the protection of personal data in the context of AI?

We have witnessed remarkable developments in the regulation of AI, including in particular the EU Artificial Intelligence Act ("**AI Act**"),[4] which – interpreted jointly with the EU General Data Protection Regulation ("**GDPR**")[5] – sets out comprehensive rules for processing personal data by AI-systems, as well as the rules for developing, providing and using such systems. In the US, we have witnessed a number of regulatory initiatives on both federal and state level that set out requirements for processing personal data online or by AI solutions. It is further underpinned in case of both the EU and the US regulation, however, that – similarly to the regulation of the internet – the regulation of AI must also not solely focus on limiting usage of new solutions and systems, but it also needs to focus on such systems and solutions (including the related infrastructure, licenses and know-how), which are owned by private entities, therefore binding legal provisions need to be introduced to set requirements concerning their provision and use.[6] Such rules, however, must be applied in proportion to the risks posed by the systems concerned.

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[4] Proposal for a regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts, Brussels, 21.4.2021, COM/2021/206 final, 2021/0106(COD)

[5] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance), OJ L 119, 4.5.2016, p. 1–88 (BG, ES, CS, DA, DE, ET, EL, EN, FR, GA, HR, IT, LV, LT, HU, MT, NL, PL, PT, RO, SK, SL, FI, SV)

[6] See: KOLTAY András: *Az új média és a szólásszabadság. A nyilvánosság alkotmányos alapjainak újragondolása*. Budapest, Wolters Kluwer Hungary, 2019. 104.

The above-referred laws are regarded as essential concerning the development and use of new technologies and therefore, they cannot be regarded as a barrier to technological progress in themselves. Appropriate regulation is of key importance, however, especially in the case of novel technologies. Bearing the above in mind, it is especially important to create such a regulatory environment which supports research and development and allows the widest possible exploitation of positive effects of such technologies, in particular in areas benefitting the whole society (for example in the field of healthcare). However, as underpinned by András Pünkösty, it is worth mentioning that for creating good and ethical regulation, we must understand the effects of new technologies on humans and society.[7] In the absence of such understanding, we cannot assess the dangers and benefits to be addressed by future regulation. It should be stressed, however, that although the critical review of European and US AI regulation forms a key part of the thesis, the aim of the thesis is to discuss the practical challenges of data processing by AI, and in this respect to identify the main gaps and difficulties and to make practical recommendations, therefore the analysis of relevant laws and regulatory efforts in the thesis serves as a framework for discussing practical problems.

It is underpinned that in many cases, the EU and US regulatory approaches generally have different perspectives which is especially true for regulating AI and data processing by AI solutions. The EU regulatory approach is more comprehensive in general, whereas US regulation – largely due to its different traditions, history and regulatory environment – is more focused on key areas or critical industries (e.g. data processing by social media companies, processing of consumer data, algorithmic discrimination, the use of deepfake solutions). Despite such differences, the US regulation largely builds on concepts developed and nurtured by EU regulation (including transparency and profiling requirements as well as the exercise of different data protection rights). US AI regulation and US case law on data processing by AI, however, highlight problems concerning the use of the technology that are also relevant within the EU, including the difficulty of transparently processing personal data by AI solutions and the problem of web scraping, applying effective anti-discrimination measures, regulating the use of deepfake technology and reducing regulatory burden on small- and middle-sized enterprises.

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[7] PÜNKÖSTY András: Egy új digitális etika megalapozásának egyes szempontjai – big data, algoritmusos döntéshozatal és a személy az adatalapú társadalomban. In: Török Bernát, Ződi Zsolt (szerk.): *A mesterséges intelligencia szabályozási kihívásai. Tanulmányok a mesterséges intelligencia és a jog határterületéről*, Budapest, Ludovika Egyetemi Kiadó, 2021. 44.

Bearing in mind that the protection of personal data may play out differently in an environment dominated by AI-systems, we may also call for reforming the current data protection regime. It is underpinned in this respect that current regulation – especially in the EU – also broadly requires introducing measures that protect the rights and interests of data subjects, however, the "fine-tuning" concerning certain rules, including, for example, the need for a "proportionate" level of transparency and the better support of data subjects' rights in digital environment and a uniform, reasonable approach to right to recourse in respect of data transfers[8] could be appropriate. In this context, the thesis focuses in particular on the identification of specific practical issues, the relevant authority and court practice, and possible further solutions.

4. Thesis structure and research methods

The structure of the thesis follows the main issues and thesis statements provided in the thesis. The first, introductory chapter is followed by a chapter defining AI, summarizing the history of AI and describing its role in modern society and relevant ethical aspects. This chapter also introduces some of the solutions, phenomena and practical challenges related to AI. The chapter further addresses the question raised by the first thesis statement, namely whether the use of AI poses a threat to the protection of personal data – although the relevant sub-chapter of the thesis focusing on AI and personal data also addresses such question and further focuses on how current data protection rules address potential threats and how the AI Act might have an impact on the current regulation and practice.

The third (hybrid) chapter of the thesis summarizes the international, European and US regulation, as well as regulation in some other third countries and describes self-regulatory efforts undertaken by large technology companies. In this respect, we also summarized the main regulatory guidelines and principles guiding the application of the law in the context of data processing by AI,[9] as well as the relevant European and US laws. The chapter also discusses the EU AI Act, including the relevant aspects of regulation and main challenges which need to

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[8] KIS Kelemen Bence, HOHMANN Balázs: A Schrems ítélet hatásai az európai uniós és magyar adattovábbítási gyakorlatokra. *Infokommunikáció és jog*, 2016/2-3. 69.
[9] RÉVÉSZ Balázs: Az adatkezelés alapelvei. In: Péterfalvi Attila, Révész Balázs, Buzás Péter (szerk.): *Magyarázat a GDPR-ról*. Budapest, Wolters Kluwer Hungary Kft., 2021. 103.

be addressed in practice including, for example, the risk-based approach to regulating AI-systems and the challenges associated with different groups.

The fourth, comprehensive chapter of the thesis discusses the regulation and practice of data processing by AI in the EU. The chapter mainly follows the structure of the GDPR and takes into account the main aspects of the regulation, as well as practical challenges and possible solutions. The chapter focuses in particular on the relevant scope of data affected by the use of AI, the transparent processing of data by AI solutions, the exercise of data subjects' rights, and the relationship between the data protection impact assessment and the fundamental rights impact assessment introduced by the EU AI Act. In addition, this chapter also focuses on sectoral data protection matters in key areas, including the use of AI in healthcare and at the workplace, as well as on online platforms, and further describes in this respect other key EU regulation, practical challenges and relevant data protection authority practice.

The fifth chapter focuses on data processing by AI in the US and summarizes relevant laws and court cases. Thus, this chapter summarizes recent regulatory developments in US federal and state regulation (including, for example, consumer data protection regulation or regulation of deepfake solutions).

This is followed, in chapter six, by particular data protection related challenges of using AI, including the data protection aspects of using general purpose AI, as well as deepfake technology and the use of biometric identification systems, since such technologies will likely pose particular challenges in the near future and many times question the way we think about the protection of personal data today. In the case of deepfake technology, the thesis also pays particular attention to the distinction between the use of deepfakes for unlawful purposes (e.g. infringement of personality rights, election fraud) and for critical, parodic, artistic purposes or related to social debate, since in the latter cases, the restriction of the relevant technology or content created by deepfake solutions would raise serious fundamental rights concerns.[10]

Finally, the seventh chapter also addresses one of the main questions of the thesis: whether we need to reconsider the protection of personal data in the context of AI. In this respect, particular

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[10] CSERVÁN Csaba: A digitalizáció hatása az alapjogok hatására és érvényesítésére. In: HOMICSKÓ Árpád Olivér (szerk.): *A digitalizáció hatása az egyes jogterületeken*, Budapest, Károli Gáspár Református Egyetem Állam- és Jogtudományi Kar, 2020. 56.

emphasis is given to issues raised and proposals put forward in previous chapters. The thesis ends with closing remarks, which also summarize the main thoughts and ideas appearing in the thesis.

The thesis follows a dogmatical and analytical approach and reflects on the issues raised by the use of AI solutions and data processing by such solutions and analyzes the applicability of relevant laws and discusses related issues, especially including the requirements of the EU AI Act relevant from a data protection perspective as well as the risk-based rules and requirements concerning trustworthy AI.[11] The methods applied regarding the thesis further adapt to the relevant chapters. Following the introduction in the first chapter, the second chapter provides an overview and summarizes the definition, history, the main ethical considerations concerning AI, whereas the third chapter discusses the main international, EU and US legislation related to the use of AI and also provides insights into the regulation and practical approaches followed by certain third countries and the self-regulation of large technology companies.

This chapter is followed by the fourth and fifth chapters, which describe the EU and US regulation and related main challenges concerning data processing by AI and practical approaches in this respect. This chapter further describes the relevant data protection authority and court practice, as well as the relevant literature. In the fifth chapter focusing on US regulation, legal comparison also plays a key role, allowing for a comparison between EU and US data protection and AI regulation. In addition, the sixth chapter describes some of the specific data protection related challenges of using AI, focusing on specific solutions or areas of use. The seventh chapter, building on the previous ones, summarizes and makes suggestions concerning the reconsideration of the protection of personal data, taking into account the impact of technological progress and the applicability of data protection requirements. Finally, the thesis ends with our closing remarks in chapter eight.

5. Research findings, closing remarks and suggestions

The objective of the thesis was primarily to address and analyze the impact of the regulation of data processing by AI on data processing practices and technological development, to review the relevant European and American regulatory approaches, data protection authority and court

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[11] TÓTH i. m. 5.

practice, and to consider the need for revising data protection requirements and practical approaches in respect of data processing by AI.

In addition to identifying and discussing the use of AI and the relevant laws and theory, the thesis also aimed to provide constructive insights and proposals that could help regulate these technologies and their application, taking into account the interests of data subjects, service providers and society. In this respect, the achievements of European and American regulation were further discussed and compared. The aim of the thesis, in this respect, was to shed light on the differences between the main regulatory aspects, rather than to make a detailed legal comparison. The thesis further assesses the possible introduction of certain US approaches into European practice.

In addition to the above, and – especially with respect to the requirements of the EU AI Act and the GDPR – those aspects were further highlighted and addressed concerning which the regulation does not appear to be sufficiently weighed or appropriate (for example in case of regulating deepfake solutions), or where regulation may present a barrier to the development or application of new technologies, including the requirements concerning the processing of special categories of personal data by AI solutions.

It is further underpinned that in addition to the analysis of relevant EU and US laws and making relevant suggestions, the thesis further reflects on legal theories and literature concerning AI and technology law, including transparency requirements concerning the use of AI for data processing, as well as supporting the exercise of data protection rights regarding which appropriate regulatory practice is considered essential.

6. List of publications related to the thesis

List of publications falling in the topic of the thesis:

Data Segregation and its Privacy Aspects. Iustum Aequum Salutare, XIX/2023. 3. 245-257.

A mesterséges intelligencia felhasználásával történő adatkezelések egyes sajátos szempontjai, Acta Humana, 2023/1. 95-123.

A közszereplők személyes adatainak védelme, különös tekintettel annak újabb fejleményeire, valamint a deepfake technológiára. In: Bándi Gyula, Pogácsás Anett (szerk.): 'A tudomány kertjéből': Válogatott doktorandusz tanulmányok, Pázmány Press, Budapest, 2022. 361-380.

A mesterséges intelligencia belügyi és biztonsági célú alkalmazása, Scientia et Securitas, 2020/1. 49-53.

A mesterséges intelligencia adatvédelmi szempontjai, különös tekintettel a belügyi szervek

adatkezelési gyakorlatára, Rendvédelem, 2020/1. 135-165.

Az egyházak általi adatkezelés. In: Kiss Gábor (szerk.): Fiatal Kutatók és Doktoranduszok X. Nemzetközi Jubileumi Teológus-konferenciájának tanulmánykötete, Doktoranduszok Országos Szövetsége, Budapest, 2020. 415-425.

Az újságírói adatkezelés negyedévszázada és eljövendő kihívásai. In: Bándi Gyula (szerk.): A sokoldalúság okán – Doktorandusz tanulmányok a Pázmány jogászképzésének 25. tanévében, Pázmány Press, Budapest, 2020. 117-134.

Applikációalapú munkavégzés a gyakorlatban, Munkajog, 2018/3. 39-43.

A pilóta nélküli légijárművek kereskedelmi és magáncélú felhasználásának adatvédelmi

kérdései, Magyar Jog, 2017/12. 777-781.

A szabadság szárnyai, avagy a pilóta nélküli légijárművek kereskedelmi és magáncélú

felhasználásának szabályozása Magyarországon, Infokommunikáció és Jog, 2017/68. 11-15.

Publications accepted by the time of finishing the thesis:

"Rules over words - the regulation of chatbots in the legal market and ethical considerations"., Acta Juridica Hungarica – Hungarian Journal of Legal Studies (planned publication: „Legal Technologies in the Service of Access to Justice" special edition, 2023)

List of publications related to the topic of the thesis:

Daniel Necz: Image Rights in Times of Crisis. In: Bándi Gyula, Pogácsás Anett (szerk.): 'Law in Times of Crisis'. Selected doctoral studies./'Jog válság idején'. Válogatott doktorandusz tanulmányok. Budapest, Pázmány Press, 2023. 168-174.

A mesterséges intelligencia hatása a szerzői jogra, Iparjogvédelmi és Szerzői Jogi Szemle, 2018/6. 51-76.