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## Is it possible to grant legal personality to artificial intelligence software systems?

Paulius Čerka <sup>a</sup>, Jurgita Grigienė <sup>a,\*</sup>, Gintarė Sirbikytė <sup>b</sup>

<sup>a</sup> Department of Private Law, Čerka and Partners Advocates Bureau, Faculty of Law, Vytautas Magnus University, Kaunas, Lithuania

<sup>b</sup> Čerka and Partners Advocates Bureau, European Lawyer Registered by Solicitors Regulation Authority, Kaunas, Lithuania

### A B S T R A C T

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The purpose of this paper is to determine whether Systems of Artificial Intelligence (SAI) can be deemed subjects of law. This aim is formulated according to the technical capabilities integrated in SAI and the SAI's ability to interact independently with other legal subjects. SAI features, such as direct connection with intellectual skills, the ability to understand, learn and make autonomous decisions may cause situations where autonomous systems based on AI will make decisions which will be in the best interests of individuals, even though conflicting with the user's own will.

To consider the possibility of SAI being recognized as possessing legal personality, we analyse the concept and features of SAI and define its operating principles. We give hypothetical examples to demonstrate the necessity of SAIs being recognized as such. The paper undertakes legal personality analysis of SAI performed: (i) using the philosophical and legal concepts of a subject (person); (ii) discussing artificial (unnatural subjects of law) as an alternative to the recognition of legal personality of SAI; (iii) using elements of legal personality set for natural and legal persons.

The analysis leads to the conclusion that the scope of SAI rights and obligations will not necessarily be the same as the scope of rights and obligations of other subjects of law. Thus, SAI could only have rights and obligations that are strictly defined by legislators. This conclusion suggests that the result of this paper may be its use in further research defining the scope of SAI rights and obligations.

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\* Corresponding author. Department of Private Law (Lithuania), Faculty of Law, Vytautas Magnus University, Ožeskiėnė 18, LT-44246 Kaunas, Lithuania.

E-mail address: [jurgita.grigiene@cerka.lt](mailto:jurgita.grigiene@cerka.lt) (J. Grigienė).

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## 1. Introduction

“Can a machine think?” The question attracting more and more attention of scientists and practitioners was raised back in 1950 by Alan Turing<sup>1</sup> who thereby set a direction for the discourse on Artificial Intelligence (AI). AI is rather new discipline, which has no single definition yet. The concept of AI was first mentioned in 1956<sup>2</sup>; the system is often defined as artificially developed intelligence related to rapidly developing technologies, which enable computers to operate intelligently, i.e. in a human-like manner.<sup>3</sup> Systems of Artificial Intelligence (SAI) are different from other regular computer algorithms (programs) due to their uniqueness, since they are able to learn independently, gather experience and come up with different solutions based on the analysis of various situations independently of the will of their developer (programmer), i.e. SAI are able to operate autonomously rather than automatically.

Today, there is a great variety of information technologies based on the operating principle of SAI, for example, Google Self-Driving Cars, autopilots controlling airplanes, digital assistants such as Siri, Cortana and Google Now, robot nurses, mind-controlled Google smart glasses, etc. These and other technologies are known worldwide and their capacity as well as use is rapidly growing. As the use of technologies based on AI becomes more and more widespread, the number of associated incidents grows as well. For example: (i) in 1.7 million miles of travel, Google Self-Driving Car had 11 accidents resulting in damage<sup>4</sup>; (ii) speech recognition software could become a contributory factor to car accidents<sup>5</sup>; (iii) robot nurses reminding patients to take their medicines fail to ensure that the medicines are actually taken, which may lead to the patient's death.<sup>6</sup>

These specific examples show that SAI are not mere science fiction.<sup>7</sup> Information technology innovation based on SAI and the above examples allow stating that SAI are not mere objects, operation of which is influenced by others. SAI act like entities.<sup>8</sup> Regardless of the exceptional operating principle of such systems, none of the legal systems has recognized SAI subjects of law so far. However, is such legal status of SAI only a

temporary attribute, which should change in time? Is it possible to grant legal personality to a System of Artificial Intelligence? Even though the problem at hand has already been addressed before,<sup>9</sup> it has attracted greater (proper) attention only in the recent years.

It should be noted that SAI that are capable of learning and making decisions independently can make the lives of people easier, but failure to manage such technology can lead to major existential threats.<sup>10</sup> Bill Gates claims that after a few decades, SAI and the level of their intelligence will lead to major concerns; therefore, it is necessary properly to prepare ourselves.<sup>11</sup> As the role of SAI in our daily lives becomes more and more important, we encounter various challenges: moral, ethical issues and problems. Legal regulation and legal system itself are not an exception. Discussions on the status of SAI that are able to make more and more complicated decisions independently in the legal systems of countries become increasingly frequent and extensive at the academic level,<sup>12</sup> in the political arena of various countries<sup>13</sup> as well as in the context of its shaping, and in the society.

The ability of SAI to learn from their own personal experience leads to independent conclusions and autonomous decision-making, i.e. what can lead them to their legal personality. Due to their ability to make decisions independently, technologies based on such systems like Machine Learning, Expert Systems or Neural Networks can no longer be treated as objects. Therefore, the aim of the paper is to determine whether SAI can be deemed subjects of law. The object of the paper is legal personality of SAI and the methods of research are information collection, systematizing, generalizing, valuation, comparison, analysis of scientific literature, synthesis and deduction.

The paper consists of five sections. Section 1 presents the concept of SAI and analyses the concept and main features of such system, and defines its operating principle. Section 2 answers the question whether it is necessary to recognize SAI as subjects of law. Section 3 analyses legal personality of SAI. The analysis is performed using the philosophical and legal

<sup>1</sup> Alan Turing, ‘Computing Machinery and Intelligence’ (1950) 49 (236) *Mind* 433–460.

<sup>2</sup> Paulius Čerka, Jurgita Grigienė, Gintarė Sirbikytė, ‘Liability for damages caused by Artificial Intelligence’ (2015) 31 (3) *Computer Law & Security Review* 376 – 389.

<sup>3</sup> William Raynor, *The international dictionary of artificial intelligence* (The Glenlake Publishing Company 1999) 13.

<sup>4</sup> Dan Moren, People Keep Crashing Into Google's Self Driving Cars (2015), <<http://www.popsoci.com/people-keep-crashing-googles-self-driving-cars>> accessed 13 June 2015.

<sup>5</sup> IBN Live, Apple's Siri could crash your car (2014), <<http://ibnlive.in.com/news/apples-siri-could-crash-your-car/504671-11.html>> accessed 13 June 2015.

<sup>6</sup> Kseniya Charova, Cameron Schaeffer, Lucas Garron, *Robotic Nurses* (2011). <<http://cs.stanford.edu/people/eroberts/cs181/projects/2010-11/ComputersMakingDecisions/robotic-nurses/index.html>> accessed 13 June 2015.

<sup>7</sup> John Haugeland, *Artificial Intelligence: The Very Idea* (Massachusetts Institute of Technology 1989).

<sup>8</sup> Marshal S. Willick *Constitutional Law and Artificial Intelligence: The Potential Legal Recognition of Computers as “Persons”* (1985) <<http://ijcai.org/Past%20Proceedings/IJCAI-85-VOL2/PDF/115.pdf>> accessed 01 June 2015.

<sup>9</sup> Marshal S. Willick, ‘Artificial Intelligence: Some Legal Approaches and Implications’ (1983) *The AI MAGAZINE*; Lawrence B. Solum, ‘Legal Personhood for Artificial Intelligences’ (1992) 70 *North Carolina Law Review* 1231, 1231.

<sup>10</sup> Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford University Press 2014) 18.

<sup>11</sup> Peter Holley, Bill Gates on dangers of artificial intelligence: “I don’t understand why some people are not concerned” (2015) <<https://www.washingtonpost.com/news/the-switch/wp/2015/01/28/bill-gates-on-dangers-of-artificial-intelligence-dont-understand-why-some-people-are-not-concerned/>> accessed 13 June 2015.

<sup>12</sup> For example: Nils J. Nilsson, ‘The quest for artificial intelligence. A history of ideas and achievements’ (2010); Migle Laukytė, ‘Artificial and Autonomous: A Person?’ (2012); Kathleen Mykytyn & Peter P. Mykytyn, & Jr. Craig W. Slinkman, *Expert Systems: A Question of Liability* (1990); Luke Muehlhauser & Anna Salamon, *Intelligence Explosion: Evidence and Import* (2012); Curtis E.A. Karnow, *Liability For Distributed Artificial Intelligences* (1996) and the others.

<sup>13</sup> *RoboLaw Regulating Emerging Robotic Technologies in Europe. Robotics Facing Law and Ethics*. Collaborative Project FP7 GA 289092 information <<http://www.robotlaw.eu/>> accessed 20 July 2015.

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