

Challenges and Ethical Solutions in Using the Chatbot

Cîmpeanu Ionuț-Alexandru

The Bucharest University of Economic Studies

Faculty of Cybernetics, Statistics and Economic Informatics, Romania

ionut.cimpeanu@csie.ase.ro

Artificial intelligence is making its mark on more and more different areas of our lives. No matter what business we are talking about, a smart application offers customers solutions and added value in a more digitalized and automated world. In business, those who do not participate in the development and implementation of innovative solutions exclude the company from the market. However, it uses these necessary IT solutions and ethical challenges related to applicable AI applications, managing and responsibly using the information stored in the applications, the content of the messages, and the way users relate to other users and the chatbot. The paper is structured in four sections. In the Introduction, we talked about the chatbot, about its necessity and usefulness, and about the permanent appearance of some ethical challenges related to the use of the chatbot in different fields of activity. In the next section, we listed a number of ethical challenges that chatbot developers / users face detailing these challenges and setting an example of concrete ethical / unethical approaches. Section III offers solutions to some of the ethical challenges found in the paper. The conclusions provide an overview of the topics addressed in the paper and the directions of perspective in the ethical approach to the issue.

Keywords: Chatbot, ethics, business, challenges, solutions.

1 Introduction

Society evolves and with technology and science, the world is revolutionized. These two must keep up with social requirements, with the personalized needs of each field of activity, with the challenges that can be encountered in finding solutions to solve these challenges, with the progress and desire for better people, with making a profit in the activities carried out. 71 years ago, the revolutionary idea of the chatbot promoted by Alan Turing appeared. So, in 1966 the first chatbot was developed, Eliza, who had conversations with people [19]. Since then, new chatbot models have continued to appear, with applicability in different fields of activity and having benefits for people with various health problems, in education - IT solutions that help pupils / students / teachers to collaborate and achieve very good results. , in tourism - offering help and information for buying

a flight ticket, booking a stay, canceling a stay, obtaining information about the price of a ticket compared to other flights, information about visiting tourist spots, travel options in the locality, in business - solutions that allow employees / managers to collaborate and exchange professional information in the field of work, to upload applications for leave / employment / retirement / transfer to another salary category, to modify or upload documents based on chatbot data, to have a dialogue with the chatbot to find out the answer to professional tasks [18]. The chatbot is tested and used to provide and gather health information from people and in some cases to provide treatment and counseling services. There are mobile chatbot apps that help people manage depression or anxiety by teaching them self-care and attention techniques. Over time, chatbots have become an innovative technology that promises to change the world by taking over much of human activity or tasks. By using

the chatbot in companies / firms, opportunities are opened to improve and streamline the activity in a multitude of fields.

In addition to the many advantages of using the chatbot in different industries, there are also ethical challenges related to the development and implementation of the chatbot, the form and content of communication between the chatbot and users [1]. Solutions to these challenges are found as a lot of research is consulted, read, and studied, studies that address the ethical issues and ongoing challenges that arise and need to be constantly investigated, as society evolves, technology and science move rapidly toward different, innovative, and creative approaches. Ethics helps institutions and individuals by guiding society to what is good and useful to do, to choose thinking, communication, activity using reason and common sense, dignity and well-being of all, to acquire and apply useful skills to distinguish good from evil, when creating a climate of collaboration, trust, solidarity [17]. Respecting a code of norms and rules, a civilized environment of conversation and relationship is created in which each individual feels appreciated and balanced, but also the collective requirements are met. In society, in everything we do, in all areas of activity in which people create and find innovative solutions, ethics is necessary and mandatory because it defines how production relations will evolve in close connection with technical progress and production forces. with which they must adorn themselves. This goal requires constant efforts and all people to understand the need for ethics in everything we do, in everything we think, in our actions, in our perceptions of ourselves and those around us. As ethics is necessary in all fields of activity, ethical norms and rules must be known

and applied in business, in the activity of research, development, and implementation of AI.

The topic of research on the ethical challenges of using chatbots in conversation is a current issue that involves many factors in resolving it and holding all those who can make decisions in this regard accountable [23]. The multitude of ethical issues that arise show the need to carefully research this issue and to find solutions related to human-machine conversational processes and their integration with AI principles. When a chatbot develops and appears on the market for consumers, people need to be aware of the features of the IT solution and be warned about the implications of their interaction with the chatbot. Conversations between users and chatbots are not just words used for data transfer and to form a robot conversation pattern. Conversations are strategic processes that have the role of strengthening users' trust in the chatbot, in the information it gives, in the company that transmits this information to users, in reducing uncertainties about people, processes, services, knowledge.

2. Ethical challenges in using the chatbot

A). Responsibility

As with any new technology, the use of the chatbot has ethical challenges and a lot of implications that we need to consider to ensure that the implementation and use of the chatbot in the chosen field of activity are done responsibly. An example of an IT solution that was used irresponsibly and attracted a lot of ethical implications and challenges was the Microsoft Tay chatbot [22]. It aimed to conduct a dialogue with people on Twitter by learning to reply and find answers to their questions based on the conversations they develop. In the first conversations, the way of exchanging remarks was kind, in a friendly way, each user using respectful and polite words when requesting information or when he wanted to have a dialogue with the chatbot. As these conversations evolved and the number of

chatbot users increased, the dialogue gained a strong negative character, with insults and harsh words addressed to people of different ethnicities, especially Roma, but also words with strong racist content. This negative change in the way we communicate, the transformation of mood, and the pleasure of speaking in a civilized way was caused by chatbot users who felt the pleasure and need to constantly address such words with offensive and racist content, whether or not they were given the opportunity to talk. Thus, because the chatbot had a program through which it learned to respond mainly using communication models from previous conversations, this chatbot experiment was a failure, the ethical value of the content of the information transmitted from the user to the chatbot, and vice versa, getting an increasingly a negative nuance.

B). Transparency

Another ethical challenge in using the chatbot is transparency. This entails knowledge of how to communicate. It is very important to inform customers when communicating with a real person or a chatbot. Thus, the level of trust in the information obtained in the dialogue is higher when the user communicates with a person. If users find out that a company is using a chatbot to interact with them, they may feel betrayed or even turn against the company. As robots become more human, emotions are implemented, abilities to react in conversation to the user's mood, people's emotional response to these robots increased first, and then suddenly decreased. People have high expectations of the chatbot when it communicates very similarly to human language. However, when a chatbot does not behave exactly like a real person, expectations are replaced by distrust. The

question is who owns the information and what is the confidentiality of the chatbot in relation to customers, how confident are users that the information communicated between them and the chatbot will not be passed on and will not reach different parts [20]. If a chatbot makes a shopping list based on orders in previous requests and based on user preferences, does this information belong to the chatbot or user? Can this information be retrieved from the chatbot dialog, or can it be sold or passed on to others? If the answer is YES, then the user must be informed about this, know, and agree. Companies wishing to implement a chatbot must address these issues in the development, implementation, use of the chatbot and be transparent in communicating the conditions of service provision, in the privacy policy, and inform users, from the beginning, if they will converse. with a chatbot or a person.

C). The ability to replace man

However, a great challenge related to the chatbot is reflected in its ability to replace the man in the profession he practices. Researchers point out that all human jobs will be automated in 100 years and that there is a 50% chance that this will happen in the next half century [2]. Analysts and researchers argue that the highest efficiency in an area of activity is achieved when people and chatbots work together [1]. Chatbot is used to answer questions and quickly search a large database in a much more efficient way than a person, while people can retrieve from the chatbot when the situation becomes more complicated and a lot more documentation is needed of to give an answer. The user logs into the application and requests information from the chatbot. Through the initial interaction with customers, the chatbot records the information and the detailed content regarding the request, after which the information is transmitted to the most

qualified person in the company, using the skills, knowledge, and professional values according to his qualification, makes a decision on the answer to be sent. Research shows that technological advances in chatbots are reducing unemployment and increasing employment by creating jobs in new sectors [3]. In other words, the idea that AI leads to unemployment and a lack of jobs is being combated. In the future, chatbots will not take jobs from people but the man and the machine will work together, and complement each other to achieve maximum efficiency. Moreover, even though chatbots take over some of the human tasks and some of the jobs from people, the use of chatbots leads to a technological revolution that results in an increase in the employment rate of people in various fields. activity.

Developers can design chatbot models that have a pleasant physical appearance and manners, movements that can be modified, language and dialect of speech that match the cultural environment, the way a user thinks and likes to communicate, including the race, ethnicity, social or economic environment in which he lives and works. This helps to establish relationships between chatbot users by contributing to a good understanding between them and an effective dialogue.

D). Design biases

Using the chatbot brings other ethical challenges. The appearance and behavior of the chatbot, the way it dialogues, the responses it offers to users attract design biases, such as: preference for racial or ethnic communication, background and information in racial or ethnic chatbots [23]. The chatbot knowledge base used to train machine learning algorithms and the way the chatbot generates responses to users suffer from even systematic

errors or incorrect results in sending a chatbot message to the user. by privileging one group of users over other groups. This favoring is done from the datasets used to develop the chatbot conversation and may contain problems with missing data, misclassification, and measurement errors, small sample sizes used in determining datasets, and keywords resulting in underestimation and inaccurate predictions responses to users. Implementing the chatbot in different countries and cultures may suffer from these design shortcomings if technology companies do not take into account the demographic characteristics and specific needs of the target user groups. Thus, the developers of the chatbot must also take into account the prejudices and the way of thinking of the human groups for which they develop the chatbot when designing and testing the IT solution. It is necessary to include data from the target population and from different communities in a population that would suffer or could be affected by ambiguities, dysfunctions, irregularities in the design, testing, and implementation of these technologies.

The chatbot works with a certain level of autonomy; it cannot be fully controlled in the way it acts and answers. There is a potential negative risk to people if the chatbot does not adequately address the conversation scenarios in which the implemented system detects potential or safe security risks. We can exemplify these statements if a person converses with a chatbot and during the dialogue they reveal that they have suicide plans and that they want to put them into practice [25]. Also, in such situations patients with mental illness, psychotic symptoms, cognitive disorders or other problems such as depression are included that make it difficult for the chatbot to find an answer, but also alter its knowledge base with negative information. In order to find solutions to the conversation and in the case of these problems mentioned

above, the developers of the chatbot must set the limit for the disclosure and disclosure of a user's personal data as well as the intended use of such data. The issue of a possible verification of users before they have access to the conversation with the chatbot is also discussed. As a precaution against users, the chatbot technology must be designed to automatically monitor the risks that may arise in the conversation, as well as the measures that the chatbot may take in the circumstances. Some IT solutions have been designed to meet these requirements as well. So when a situation like the one mentioned earlier appears in the conversation, the chatbot quickly displays help resources, such as a crisis line or an alarm announcing that something is wrong or someone urgently needs help. In these cases, competent and well-trained people should add dialogue procedures and additional information to allow even the user to be contacted and after the dialogue or chatbot can even make a recommendation for assistance for people who have used such expression. of negative words.

E). Confidentiality

Another ethical challenge is confidentiality [21]. When users use a chatbot, their personal data must not be disclosed without their consent. User privacy must be viewed with the utmost responsibility by people who develop, implement, and test chatbots because poor security of these solutions could harm users. The chatbot can collect large amounts of personal data when people talk to it. The possibility of storing this personal data and more sensitive information, such as those related to the health of users, their accounts, finances, e-mail addresses or online accounts, trips or stays by announcing them on social accounts thus so that it can be easily

found when owners leave home and buildings are unattended, diminishes the confidentiality that a chatbot can provide to the user by posing serious problems of user security and more rigorous and careful design of robots because it can even affect security and the security of the robot, as well as the developer of the chatbot or the manager / owner of the company that uses the chatbot.

F). Manipulating users perceptions of a particular issue

Other ethical issues encountered in using chatbot-based conversations are reflected in the large amount of information it stores and on the basis of which the chatbot creates templates that provide additional intelligence to chatbot owners. Thus, they could program the chatbot to use this data in the process of manipulating users' perceptions of a particular problem. An example of manipulating users using the chatbot would be to evaluate products or services offered by the company by including in the knowledge base of the chatbot biased information that would favor the company by attracting customers but would disadvantage users by a mass misinformation and a misperception about poor quality products and services, but which are sold or perceived as having great value. This potential imbalance reflected in the informative power of the chatbot could increase the risk for users to interact with different companies through a chatbot. Another example of chatbot manipulation is political propaganda. In online policy research, the most widely used strategy in more than 38 countries is to develop political robots or automated accounts designed to mimic human behavior [15]. These robots were specially designed for the use of social manipulation techniques by spreading false news, political propaganda made during elections in different countries, forming and spreading a false popularity of

a personality in social life, spreading stories that denigrate certain people in favor of others, giving political support to people who want to reach high positions without regard to ethical values and fairness.

G). The credibility of the chatbot among users

We also consider the fact that the chatbot is not a moral and independent agent, it does not have the capacity to make moral reasoning, to divide the information received into positive and negative, and to direct to the user only those data that it considers beneficial [5]. Depending on the information stored in the database and on the conversations with users, and customer experiences, the chatbot forms communication models memorizing the way you want to talk and the type messages you need to send to users. The chatbot can improve its customer experience and customer interactions based on the data collected by providing personalized messages tailored to users' needs based on sets of information collected during human-chatbot conversations. However, the chatbot cannot have human qualities such as: judgment, empathy, discretion, it will not be able to secure this information and will not be able to keep it secret from other users by disclosing the data collected to all customers. The chatbot makes decisions but does not make judgments. Its decisions are based on algorithms included in ways that benefit the business owner or chatbot developer. There are also cases where the chatbot risks spreading rumors or misinformation or may even verbally attack people who post personal thoughts and opinions in messages [4]. The chatbot must include protection against the types of people who use obscene language. One solution to these cases would be to apply rules

when the chatbot identifies these negative forms of expression and exclude people from the conversation, followed by a final sanction - closing the user's account.

Many models of chatbots imitate man in both communication and physical appearance. We notice a spectacular evolution of the chatbot so that closer and closer to man is possible. The chatbot imitates man, even though it has nothing human in it. The credibility of the chatbot in front of a large number of users also depends on how the chatbot manages to promote and encourage human-robot dialogue by attracting potential interlocutors through secure messages, which include correct and desired information by users, through the trust gained in interactions achieved by reducing or minimizing people's perceptions of the risks of using the chatbot in conversations, by transmitting personal data to robots. The messages of the chatbot must be correct, without mistakes in written or verbal expression, without words not understood by the user, aspects that could affect the human-robot conversational relationship [14]. Studies show that not taking into account the form of the message, the way the chatbot communicates with users through clear and precise statements said or written correctly and with direct address to the meaning of words in the statements expressed, can lead to ambiguity in expression and loss of credibility. [10]. Approaching a proper, pleasant, and balanced tone diminishes the possibility of having a tiring or unpleasant conversation. Conversation patterns in the chatbot's knowledge base must also include information from real facts by which the chatbot gives assurances in the conversation that the data received is correct, secure, and there is no room for misinterpretation. Chatbot developers and companies that want to implement a chatbot must include in the chatbot approach how to classify the different types of conversations according to

different purposes, this refers to the percentage of meeting the company's objectives, to the degree of user satisfaction, and to the kind of conversational interaction relationships. Four types of chatbot scheduling conversations have been identified [14]:

- the first type of conversations includes: statements that show initiative and use forms of expression such as: "I will do...", "I have to do...", "I will solve..."; statements that show requests and use forms of expression such as: "You will approve...", "You will request..."; statements that show promise and use forms of expression such as: "We will bring...", "We will achieve...", "We will integrate...", "We will benefit..." which focus users' attention on what could be achieved in the future or what should be done.
- the second type of conversation includes statements used to understand the message and helps the chatbot find the right meaning of a request or problem. In these conversations, evidence is given, hypotheses are made, and information is examined; additional data are requested to help formulate a correct and clear statement; users' emotions and feelings are researched and used; the beliefs and habits of those are observed and analyzed. interrogated.
- the third type of conversation includes statements used for performance using a multitude of exhortations to action, requests, and promises that interact in order to achieve the desired result.
- the fourth type of conversation includes statements used for closing using forms of communication that direct the user to the end of the task, the chatbot ensuring that all participants in the conversational interaction will give positive feedback

and be satisfied with the way the dialogue went.

3. Solutions to current ethical issues

While people have the opportunity to be helped by the chatbot when addressing new areas of activity and new services worldwide, chatbot developers need to think responsibly about the security, dignity, and respect that users must constantly maintain to ensure the ethical use and application of technology. One solution by which we can address and come up with solutions to the current ethical challenges associated with using chatbots is to review or think about and develop new codes and principles of professional ethics and practical guidelines to assist in the process of communication between people. Many codes of ethics and practical guidelines in various fields of activity do not address the use of technologies that replace people, namely chatbots. Another solution that I find appropriate and that would bring immediate solutions to these problems is to set up working groups at the international level to review existing principles and ethical guidelines with concrete reports on situations that arise and that disrupt the smooth running of communication and even making recommendations to ensure the ethical use of AI-based tools, including chatbots.

Discrepancies may arise in the relationships and conversations between users and the chatbot in the sense that the chatbot developer has more information about the services it provides or the information it wants to provide to the chatbot users [7]. Here are two ethical issues: a problem of selection and collaboration [6] that occurs when the user cannot know and assess all the skills, knowledge, and information of the person with whom he is in dialogue and who gives him answers to questions leading to a certain situation resolution; the second ethical issue is that the information

transmitted by the chatbot affects users' perceptions of the quality of a product or service [8]. Based on the research and documentation, we have identified possible solutions to solve these problems:

- achieving a clear and precise information of the user before solving a task or reaching a stable conclusion by carrying out with priority a private exchange of information with details about the requested product / service requested / necessary information / customer need. This private exchange of information must involve both parties - the user and the chatbot - in a responsible and useful interaction for both parties.
- achieving and developing a communicative and conversational direction that promotes a common culture based on meanings and meanings of situations / events / circumstances discussed or may occur in conversations to avoid misunderstanding messages and failing to achieve dialogue objectives.
- the development of a communication in which the user is put first, to be satisfied with the way he is informed and the quality of the information received, as well as the promotion of a system through which the user can provide feedback for how the chatbot found quickly and effective response to the requested problem.

Studies based on users' conversation with the chatbot show that IT solutions that have implemented a chatbot for conversation are required to reveal their identity immediately and present themselves from the beginning of the dialogue so that users can clearly understand whether they are talking to a robot or with one person. Finding out the

identity of the information agent helps to stimulate the conversation so that one moves to a position of dialogue made on an equal footing, to a respectful and sincere listening on both sides [9]. Given all the above, I think it would be helpful if the chatbot revealed its identity from the beginning of the conversation with the user by making a statement similar to it: "Hello! I am Ioana chatbot and I'll try to find an answer to your problem. How can I help you?"

Chatbot developers must include specific mental models in its knowledge base to understand the messages through which meanings are interpreted and assigned meanings to the reality about which they dialogue [10]. These models help the chatbot process information by sending messages about how the world works, reports on human values and beliefs, psychological dispositions related to emotions a person goes through or feels, and interpretations of original messages based on similar words. used in previous expressions. The social and cultural context of chatbot users influences the conversation through the personal opinions of registered chatbot users through cooperation between users in order to achieve a goal or find a solution [11].

Studies and research that discuss the ethical issues of communicating with chatbots also talk about the need to immediately declare the purpose of the conversation and about communicating the intention of the chatbot in the dialogue with the user [12]. There are two intentions in users' conversations with the chatbot:

- the operational intention is characterized by the chatbot's use of a pleasant, low, understanding, conciliatory tone, by using words of understanding, apology, thanks, balance in conversation. For example: "I'm glad to hear this", "Greetings on this beautiful day!", "I'm glad to meet you",

"Thank you for your help". The operational intention also consists in sending the user some informative materials to help him find an answer to the problem for which he used the chatbot, such as: graphics, links, emails, reports, diagrams, tables [14].

- the strategic intention is characterized by the orientation of the questions and the direction of the answers in order to collect new data, ideas that have not been discussed so far, and different perspectives to address issues discussed by users. In this case, the tone used by the chatbot is completely different, being provocative, insistent, insistent, with the use in expression of statements that represent questions based on which new information can be discovered and collected. For example: "What do you want to know?", "What do you mean?", "What do you intend to achieve?", "Why are you interested in this information?", "What is the use of the information found?" [13].

Other studies that discuss the ethical issues of communicating with chatbots talk about three sets of questions that should be included in the development of chatbot conversations:

- the first set of questions must be asked before a user has access to public conversations and contains mental patterns, objectives, and intentions of users. The chatbot asks questions at the beginning of the interaction with a new user, the dialogue taking place only between the chatbot and this user. Thus, the chatbot can discover the mental models of the users and could frame the type of conversation in a certain model that corresponds or does not correspond to the conversation ethics [10]. These questions and answers should not be included in the knowledge base of the chatbot, they have the role of identifying and classifying the

conversation and the user's intention, and based on them the user has access to the account or is not allowed access because the intention contravenes ethical norms of conversation. By analyzing the initial and individual chatbot- user conversation, the main task of the chatbot is to find out the information about the user, his role in possible conversations, the goals of the conversation, intentions, and results expected by the user. None of the parties involved in the conversation should be considered only a source of information, but a discussion partner from which each party has something to gain and both partners are responsible and accountable for the information given.

- the second set of questions contains ethical principles and norms extracted from the developer from the ethical conversation literature. These questions help increase the chatbot's credibility and find answers to the ethical challenges the chatbot faces in dialogue with users. The second set of questions is asked by the chatbot users in order to find out if they want to address a broader topic in the conversation or want to focus on an issue. In forming messages, the chatbot will take into account both the unique contribution of each user, as each person thinks differently about solving a problem, and the statements and thinking of a group of people who have a greater share in the use of different patterns. Identifying these conversation patterns aims to avoid possible conversations with unethical, negative content that would affect users' trust in other users and even users' trust in the chatbot. Studies show that users' trust in other users and in the chatbot can be created through a process of discovery through dialogue with others and the quality of the dialogue [17]. The quality of dialogue can be improved by the developer by including in the way the chatbot expresses empathic statements, with understandable and pleasant forms of addressing, attractive to users, or with statements in which the chatbot expresses its agreement or disagreement for a form of communication or a topic of conversation [24].
- the third set of questions contains conversation rules that must be made known to users by the chatbot from the

beginning of a conversation. Studies show that the way a conversation will take place, as well as its content, has a lot to do with the social and cultural environment from which the users come. The third set of questions helps developers achieve security and privacy for chatbot - users. Developing a conversation based on ethical rules and regulations allows the developer to implement an IT solution in which the chatbot can find ideas and solutions to share with users. At the same time, users feel free to dialogue with each other or with the chatbot, but have the obligation to follow ethical rules and regulations in order to use the application [18].

4. Conclusion

In this paper we talked about chatbot, its need and usefulness in various industries, we addressed issues related to ethics and ethical challenges that developers and users of smart solutions constantly face, we found solutions to some of these challenges. The research activity is based on the multitude of:

- studies;
- articles;
- journals;
- books;
- courses;
- tutorials.

The results of these studies concluded in a number for arguments of the need and usefulness of business ethics, in the use of chatbots in different sectors of activity through individual and collective responsibility, by applying ethical norms and rules and by the ethical approach of each problem in solving work tasks.

The introduction presents the usefulness and necessity of the chatbot and the need for customization in the construction of a chatbot so that it fulfills particular tasks depending on

the needs of the company, employees, depending on the needs of the market, and the company's objectives. Also, here we talk about a series of ethical challenges that arise as society evolves and the degree of use of these applications increases. These challenges are different and present for both the developer and the users of the chatbot, which can be overcome, and solutions can be found to improve or solve all problems through personalized, different approaches, depending on the social and cultural environment in which come from users, from the communication models implemented in the knowledge base of the chatbot and on the basis of which it formulates answers to users, from the observance of ethical norms and rules in the development and implementation of the chatbot, in the conversational process between users or between users and chatbot.

In Section II, Ethical Challenges in Chatbot Use, we have listed and developed some of the ethical challenges that arise in using chatbots, giving concrete examples of situations in which these problems have manifested and constantly coming up with examples. of studies from which we learned the concrete situations or information about the problem.

In Section III, Solutions to Current Ethical Problems, we have gathered solutions and ideas that can be successfully applied by always referring to the accessed study or the article / paper studied.

The research topic on ethical challenges related to the use of chatbots in conversation is a topical issue, which meets the needs of solving situations in which unethical, aggressive conversations, verbal violence, ethnic / racial discrimination are manifested in user conversations, and permanent adherence to norms and principles, to ethical values and rules becomes a necessity. The ethical approach also applies to the chatbot, which stores a

large amount of data, including personal data. For this data that does not remain in the system and is not used only by the person who transmitted the personal data to the chatbot, there is the issue of confidentiality and security of this data that becomes known by all users of the application.

As society evolves and with it, technology and science, new ethical challenges arise that can be improved or resolved by laws that give direct applicability to ethical norms and rules by sanctioning institutions / people who break the rules. These challenges can also be solved by constantly reporting each individual / community to the norms, rules, and ethical principles, and by the deliberate adoption by each person of an ethical behavior and attitude in any circumstance.

References

- [1] Von Malitz, B. (2016). Why chatbots won't replace humans. Retrieved January 15, 2018, Available: <https://memeburn.com/2016/04/chat-bots-wont-replace-humans/>
- [2] Grace, K., Salvatier, J., Dafoe, A., Zhang, B., & Evans, O. (2017). When will AI exceed human performance. Evidence from AI Experts. CoRR.
- [3] Stewart, I., De, D., & Cole, A. (2015). Technology and People: The great job-creating machine. Deloitte, London: UK.
- [4] Radziwill, N., & Benton, M.C. (2017). Evaluating quality of chatbots and intelligent conversational agents. Computer and Society. Available: <https://arxiv.org/pdf/1704.04579.pdf>
- [5] Marr, B. (2018). Machine Learning In Practice: How Does Amazon's Alexa Really Work? Forbes, Available: <https://www.forbes.com/sites/bernardmarr/> 2018/10/05 /how-does-amazon's-alexa-really-work/#465dde371937
- [6] Nayyar, P. R. (1990). Information asymmetries: A source of competitive advantage for diversified service firms. *Strategic Management Journal*, 11(7), 513–519. Available: <https://www.jstor.org/stable/2486325>.
- [7] Mishra, D. P., Heide, J. B., & Cort, S. G. (1998). Information asymmetry and levels of agency relationships. *Journal of Marketing Research*, 35(3), 277-295. Available: <https://doi.org/10.2307/3152028>
- [8] Holmstrom, B. (1979). Moral hazard and observability. *Bell Journal of Economics*, 1(1), 74-91. Available: <https://doi.org/10.2307/3003320>
- [9] Beech, N., MacIntosh, R., & MacLean, D. (2010). Dialogues between academics and practitioners: The role of generative dialogic encounters. *Organization Studies*, 31(9-10), 1341-1367. Available: <https://doi.org/10.1177/0170840610374396>
- [10] Mengis, J., & Eppler, M. J. (2008). Understanding and managing conversations from a knowledge perspective: An analysis of the roles and rules of face-to-face conversations in organizations. *Organization Studies*, 29(10), 1287-1313. Available: <https://doi.org/10.1177/0170840607086553>
- [11] O'Neill, A., & Jabri, M. (2007). Legitimation and group conversational practices: Implications for managing change. *Leadership & Organization Development Journal*, 28 (6), 571-588. Available: <https://doi.org/10.1108/01437730710780994>
- [12] Von Krogh, G., & Roos, J. (1995). Conversation management. *European Management Journal*, 13(4), 390-394. Available:

- [https://doi.org/10.1016/0263-2373\(95\)00032-G](https://doi.org/10.1016/0263-2373(95)00032-G)
- [13] Skordoulis, R., & Dawson, P. (2007). Reflective decisions: The use of Socratic dialogue in managing organizational change. *Management Decision*, 45(6), 991-1007. Available: <https://doi.org/10.1108/00251740710762044>
- [14] J. D., & Ford, L. W. (1995). The role of conversations in producing intentional change in organizations. *Academy of Management Review*, 20(3), 541-570. Available: <https://doi.org/10.2307/258787>
- [15] Bradshaw, S., & Howard, P.N. (2018). Challenging truth and trust: A global inventory of organized social media manipulation. Oxford Internet Institute. Available: <https://comprop.oii.ox.ac.uk/research/cybertroops2018/>
- [16] Følstad, A., & Brandtzæg, P. B. (2017). Chatbots and the new world of HCI. *Interactions*, 24(4), 38-42.
- [17] Bowen, S. A. (2016). Clarifying ethics terms in public relations from A to V, authenticity to virtue: BledCom special issue of PR review sleeping (with the) media: Media relations. *Public Relations Review*, 42(4), 564-572. Available: <https://doi.org/10.1016/j.pubrev.2016.03.012>
- [18] Hammond, S. C., & Sanders, M. L. (2002). Dialogue as social self-organization: an introduction. *Emergence: Complexity and Organization*, 4(4), 7-24. Available: [10.emerg/10.17357.82a56a167e96cf9c286a13c30ad9f893](https://doi.org/10.17357/82a56a167e96cf9c286a13c30ad9f893).
- [19] Weizenbaum J 1966 Eliza—A computer program for the study of natural language communication between man and machine. *Commun. ACM* 9(1): 36-45
- Available:
<https://dl.acm.org/doi/10.1145/365153.365168>
- [20] David D Luxton (2020), Ethical implications of conversational agents in global public health. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7133471/>
- [21] Grazia Murtarelli, Anne Gregory, Stefania Romenti (2020), A conversation-based perspective for shaping ethical human-machine interactions: The particular challenge of chatbots. Available: <https://www.sciencedirect.com/science/article/abs/pii/S0148296320305944>
- [22] Hayco de Haan (2018), Chatbot Personality and Customer Satisfaction. Available: <https://research.infosupport.com/wp-content/uploads/Chatbot-Personality-and-Customer-Satisfaction-Bachelor-Thesis-Information-Sciences-Hayco-de-Haan.pdf>
- [23] Fernando Fogliano, Fernando Fabbrini, Andre Souza, Guiherme Fidelio, Juliana Machado, Rachel Sarra (2019), Edgard, the Chatbot: Questioning Ethics in the Usage of Artificial Intelligence Through Interaction Design and Electronic Literature. Available: https://link.springer.com/chapter/10.1007/978-3-030-22219-2_25
- [24] Stoll, B., Edwards, C., & Edwards, A. (2016). “Why aren’t you a sassy little thing”: The effects of robot-enacted guilt trips on credibility and consensus in a negotiation. *Communication Studies*, 67(5), 530-547. Available: <https://doi.org/10.1080/10510974.2016.1215339>
- [25] Stewart, J. (1994). The welfare implications of moral hazard and adverse selection in competitive insurance markets. *Economic Inquiry*, 32(2), 193–208. Available: <https://doi.org/10.1111/j.1465-7295.1994.tb01324.x>



Ionuț-Alexandru Cîmpeanu graduated from the Faculty of Economic Cybernetics, Statistics and Informatics within the Bucharest University of Economic Studies in 2018. He holds a master's degree in economics by graduating from the E-Business master's program within the same faculty in 2020. In the same year, he started the research program as a doctoral student, at the Bucharest University of Economic Studies, specializing in Economic Informatics. He currently works as a programmer at TotalSoft and, in parallel, works in doctoral research at the Bucharest University of Economic Studies, specializing in Economic Informatics, participating in national and international conferences, publishing articles in specialized journals, and participating in scientific sessions on research topics in the field. His work focuses on analyzing the quality of software applications and developing these applications.