

SMART-CITY: ГОРОДСКАЯ ИНФРАСТРУКТУРА, ЭЛЕКТРОННЫЕ МУНИЦИПАЛИТЕТЫ

ВЫСОКОТЕХНОЛОГИЧНЫЕ ГОРОДА МИРА: ПРОБЛЕМЫ ИСПОЛЬЗОВАНИЯ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА

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АННОТАЦИЯ

Целью статьи является освещение основных видов использования и влияния искусственного интеллекта на жизнь потребителей в высокотехнологичных городах, таких как Сингапур. Изучены различные способы использования искусственного интеллекта в повседневной жизни горожан и его влияние на общество в целом. В настоящее время развитие технологий идет настолько быстрыми темпами, что это начинает непредсказуемое влияние на различные аспекты жизни общества. Развитие систем искусственного интеллекта сложно остановить, поэтому вопрос состоит в том, сможет ли общество поддерживать полный контроль над системами интеллектуального управления городами.

Возрастает важность глубинного понимания процессов, происходящих под воздействием искусственного интеллекта в высокотехнологичных общественных агломерациях, таких как Сингапур. Исследования подобного рода могут предсказать серьезные изменения в самом ближайшем будущем в разных аспектах функционирования городов, например, в области экономики городских агломераций, транспорта, здравоохранения и связи. Это вопросы, которые тесно связаны с повседневной жизнью людей и поэтому существенно влияющие на функционирование социально-экономических связей общества. Различные страны рассматривают возможность крупных инвестиций в технологии искусственного интеллекта, которые могут обеспечить более оптимальное функционирование разнообразных аспектов городского хозяйства. При этом важно отметить, что растущая зависимость от искусственного интеллекта в системах управления создает вакуум реальной человеческой власти.

Важной задачей является также осознание этических моментов. Основная причина, по которой искусственный интеллект не может применяться на том же уровне ответственности при принятии решений, на котором эффективно действует человек, заключается в том, что само по себе использование таких систем с «непрозрачной логикой», внушает опасения ошибок и неэффективного управления. Основная задача систем управления с использованием искусственного интеллекта на данный момент связана с задачами, которые не требуют анализа эмоций или чувств.

КЛЮЧЕВЫЕ СЛОВА

Искусственный интеллект, высокотехнологичные города, этические проблемы, социальные связи, система управления, городские агломерации.

SMART-CITY: URBAN INFRASTRUCTURE, ELECTRONIC MUNICIPALITIES

HIGH-TECH CITIES OF THE WORLD: PROBLEMS OF USE OF ARTIFICIAL INTELLIGENCE

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ABSTRACT

The goal of the thesis is to highlight the main uses and impacts of artificial intelligence to consumers' life in high-tech cities such as Singapore. The different ways to exploit artificial intelligence in consumers daily life is explored and the overall impact to society as a whole. Current technology development is substantially rapid which affects various aspects of societies. The article considers advantages and disadvantages of the artificial intelligence to consumers, especially the ethical consideration of artificial intelligence which is becoming increasingly powerful issue. However, artificial intelligence's development has started with momentum that is challenging to halt, thus, the question is whether we are able to maintain superior control over artificial intelligence.

The importance of in-depth understanding of high-tech societies such as Singapore under the impact of artificial intelligence. This type of exploration can suggest various different changes in close future, for instance, concerning economy, transportation, health-care and communication. Globally, these are issues that are intensely linked to the people's daily lives affecting substantially to societies, for instance, economical algorithms are carried out already by the artificial intelligence which creates opportunities and threats. Artificial intelligence's opportunities and threats are still under control, but great number of scholars have been arguing the moment the artificial intelligence is able to begin thinking about its strengths and weaknesses itself. Also, multiple societies and countries have been considering heavily investing into artificial intelligence which can provide substantial advantages to different aspects of society. In addition, greater and growing dependency on artificial intelligence will create vacuum of real human power in societies. Nevertheless, artificial intelligence carries disadvantages for societies too which needs to be scrutinized.

KEYWORDS

Artificial intelligence, smart-city, ethical issues, social communications, management system, urban agglomerations.

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Artificial intelligence (AI) was firstly introduced by John McCarthy in 1956 when it was considered as understanding and knowledge carried by machine, however, currently AI is linked to logic and thinking comparable to human's [Smith, 2006]. Chinese Room Argument challenges the view arguing that it was considered that computers can carry out understanding but do not produce "real" humanlike understanding over the topic [Copeland, 2002]. In addition, high-tech has been very debatable term as the technology is massively changing on daily basis which makes today's high-tech to be tomorrow's low-tech. The momentum has clashed between AI and high-tech as they both interact where dominance changes. For instance, technological developments might be dependent on AI's creations whereas technology provides existence for AI. Nevertheless, AI can be considered to be the flagship for high-tech developments.

High-tech societies are often considered to be solely in places where those developments are generated, however, locations where technology is deployed in wider use than creation level have substantial effect over the society. For instance, Silicon Valley is considered to be the nest for new high-tech developments whereas Singapore is trying to brand itself to become pioneers in AI in consumer use. This can be seen in different ways such as governmental support, heavy investments, logistics and cultural acceptance [Krasadakis, 2018]. AI needs fostering field in order to become successfully executed in society where consumers have greater access to different AI functions [Wee, 2011]. Singapore wants to enhance AI in terms to create new economic and greater social factor pool of opportunities [AI Singapore, 2018]. This emphasizes the importance of different aspects that are enabling AI, for instance, consumers' access and use of AI in small village of Kazakhstan are essentially different in terms of fostering factors including governmental support, heavy investments, advanced logistics and cultural acceptance. Currently, Singapore's digital economy is controlled and operated through AI and it sees its future to be pioneers for taking AI in more widely usage [Yu, 2018]. In addition, government's role in high-tech societies is considerable as, for instance, Singapore has forward-thinking government which sees the potential of AI in their society. According to Accenture's survey in 2017 where the potential readiness of Singapore nation for hyper-personalized AI was 35 %. Also, fertile platform for AI is given the heavy investments on AI and expertise in IT [EDB, 2017].

Society needs to have certain factors to provide the platform for AI in addition to high-technology environment. The greatest stepping stones for AI are the governmental support, heavy investments, logistics and social culture [Heath, 2018]. These four aspects are crucial when considering creating sustainable and well-performing high-tech society with AI. Financial consideration is always in hand when development is discussed, in addition society needs governmental support in order to be socially accepted. Currently, massive amount of information is filtered through AI which requires trust as this information can be altered by AI. Other social considerations are that the dilution of democracy can be appear as the information is able to be altered [Nemitz, 2018]. One of the world's successful and largest logistics companies DHL is using the AI in its business functions. However, infrastructure of the society like Singapore needs to be already organized in order to create and enhance the society functions.

The progress of AI has been scrutinized for 13 years intensely. At the moment, AI is able to imitate human intelligence with thinking, reasoning, learning and carrying out decisions. Especially, there is great focus to develop these humanlike characteristics for AI. Already now, AI has strong presence in efficiency savings of large corporations. Nevertheless, AI has far-reaching arms that links from corporations to consumers as the nature of humans suggests laziness as humans need motivation to carry out functions, hence, AI is providing solution for this in consumers' daily life. According to PWC's survey, 34 % of respondents had ordered food through Siri – voice assistant, thus, AI is able to conduct basic level of conversation and logic of human when interaction is needed.

The significance of progress of AI in the recent 13 years is easier to measure from consumer's perspective. Greatest indication of AI is the comparison between traditional grocery shopping and AI grocery shopping where Amazon launched its self-service grocery store in 2018 where the purchases are tracked based on the location at the store. When this is combined with algorithms that measure the purchasing behavior the consumer purchasing process is ahead of massive change [Ghershgorn, 2018]. When there is need of quick calculations it is asked from Siri instead of using traditional calculators and when you want to get a ride to home the cars might be self-driving cars. Finally, when you reach home Netflix knows exactly what you want to watch at that particular moment [Mills, 2018]. There has been extensive discussions concerning AI creating movies. Already, AI is able rewrite its own code in games which enables more personalized and behavior-based games. Now, Netflix has over 130 million

subscribers that gives a platform to scrutiny consumer behavior with entertainment. Thus, partially the success of Netflix Originals content has gained substantial success as it is using data gained from subscribers, for instance, Netflix is able to spot the most interesting parts of movies and series, in addition, it can tell when you are feeling to watch certain type of movies. Despite the fact AI is able to create entertainment content but entertainment is often considered as art. Hence, once AI is able to create successful entertainment, one essential question raises, who will be collecting the Oscar price from the stage? [PWC, 2018].

AI has extensive measures when concerning the impact over the economics of different societies. Solely AI's role in society's economy can be substantial. In Singapore, AI can be seen potential factor to double Singapore's growth rate by 2035 [Yan Min, 2017]. Also, AI has and will be affecting economy which enables better efficiency and greater earnings [Leong, 2018]. Besides, AI is creating fascinating concept of humanlike functioning and greater profits in stock market it has substantial impact over other fields of life. Health care has gained greater emphasis in AI as according to Jiang, prognosis and predication rates were better than human's due to access to larger amount of information with shorter time of period than human mind is capable of processing [Jiang, 2017]. In terms of businesses, the operations are more often able to enjoy from better efficiency and productivity which increases the financial health of the companies. In addition, AI gives better opportunity for processes to be fully automatization. According to Seagate's Technology survey already 60 % of Singapore's ITC companies use AI part of their operations whereas R&D had the lowest rate of 41 %. Another prominent survey gave positive outlook on Singapore's flagship status of AI as global data growth is expected to grow to 163 zettabytes by 2025 which large share is due to Singapore's investments and developments with AI. Solely, the national research foundation of Singapore gave over 150 million dollars USA to boost Singapore's own capabilities to introduce even wider use of AI in the society [Yang, 2018].

The importance of in-depth understanding of high-tech societies such as Singapore under the impact of AI. This type of exploration can suggest various different changes in close future, for instance, concerning economy, transportation, health-care and communication. Globally, these are issues that are intensely linked to the people's daily lives affecting substantially to societies, for instance, economical algorithms are carried out already by the AI which creates opportunities and threats. AI's opportunities and threats are still under control, but great number of scholars have been arguing the moment the AI is able to begin thinking about its strengths and weaknesses itself. Also, multiple societies and countries have been considering heavily investing into AI which can provide substantial advantages to different aspects of society. In addition, greater and growing dependency on AI will create vacuum of real human power in societies. Nevertheless, AI carries disadvantages for societies too which needs to be scrutinized.

AI has undeniably advantages that are not easily overthrown. However, developments never come with easy acceptance and clear superior benefits. Especially from Singapore's perspective the greatest disadvantages of AI over the society is that it does not give you the way back, once the change has the momentum [Singh, 2018]. The change includes from reduction in manpower to personalized service. Once AI is fully automating processes the need for manpower reduces radically, however, the change is considering more substantially fields that require well-defined and easy tasks. For example, driving and factory tasks are under the risk of reduction in manpower. Nevertheless, the manpower reduction is not expected to be too great as new places and tasks are created with development of technology and AI. Since, 1900s the technology has developed exponentially, and it has not decreased the need for manpower but on contrary it has increased with large scale [Krasadakis, 2018]. Personal service has become into personalized service during the era of enormous development of AI. Singapore wants to become center of AI which means that most of the consumer services are personalized which takes into consideration each consumer's preferences and behavior which provides better opportunity for businesses to create a personalized need for the consumer to purchase the business's product [Shabbir and Anwer, 2015]. Thus, the importance of people starts slowly to shade away which indicates that people become increasingly uncommon to deal with other people which leads into world of machines step by step. In addition, gathering of data and privacy are gaining increasing importance in legislation and common rules.

Three main implications of AI are able to be seen by consumer which are transportation, criminal justice and advertising. Delgado argues that transportation has been under huge shift within last few years, for instance, Uber and Lyft are already exploiting self-driving cars in their operations (2018). Great advantage is that people will save rather substantial amount of time when commuting is done by AI, however, at the moment scandals with Tesla have created uncertainty and unreliability amongst consumers to self-driving cars. Advancements

in facial recognition have provided improved opportunities to recognize suspects despite the fact of using fingerprints. Advertising is reaching almost each consumer globally through online marketing in forms of SEO and so on. At this second, AI is building and generating new information for our own profiles that is taken from online. This is the root cause for personalizing services and products when it is easier to target to certain target groups. Thus, the consumerism is at its peaked than ever in history. Nevertheless, AI has already gained substantial share of consumer's daily life without truly understanding that behind the function AI is responsible for it.

Ethical considerations are often discussed when AI is concerned, especially AI's role in the future. The main reason for AI's ability not to be at the same level of cleverness as human's is because it might frighten people that AI would not be able effectively carry out its functions, thus, AI main task at the moment is involved in tasks that do not require emotions or feelings. According to Talty, there still are "narrow" AIs involved in our daily lives from GPS systems to Alibaba recommendations (2018). Case Alpha 4 is known for exploring the AI's ability to be conscious. The case focuses on researching whether AI can be treated similarly with humans in field of law, for example. Another interesting ethical consideration is whether AI can replace a human in person's life. If AI are able to know person's behavior better than himself and recognized the best possible solutions are interesting topics, especially, if woman seeks for husband and the perfect husband could be AI instead of real human [Talty, 2018]. Thus, true level of feelings and emotions are hard to track whether they are learned behavior and planned reactions or true emotional feelings. Lastly, belief is often combination of several factors such as values and traditions. Growth is in essential role in both of these, hence, it is rather difficult for AI to create belief for it as the growth might be lacking.

AI is becoming increasingly dominant factor in our daily lives. The change towards behavior based machines that are providing interaction that is comparable between two humans. Overall, the AI is giving substantial opportunity for businesses and consumers to expand the thinking and help to function easier than now. Nevertheless, the unknown might create feelings uncertainty that can be creating issues between societies or within society. However, globally the question should not be if AI will conquer because the question is when the AI will be pre-eminent. Once, AI is able to reach the consciousness level of humans and able to understand mistakes and correct them like humans the key issue is who holds the control and of whom. According to Ruta, the goal of development of AI is that it will align with human values [Ruta, 2018].

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