UNDERSTANDING AND IMPROVISATION OF HUMAN PERCEPTION USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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Abstract

The paper deals with the topic of improvising human perception using Artificial Intelligence to make human beings more efficient and productive. Understanding human perception takes a lot of non-verbal cues such as facial expressions, gesture, body language and tone of voice. Recent research has been made through facial coding and neurofeedback training. To analyse the probable response of a human being at certain expression of emotion, collection of data based on facial expression, vocal utterances, brainwave frequency under challenging condition ssuch as anger, contempt, disgust, fear, sadness and surprise is required. If we can formulate a nalgorithm based on the data collected ,then not only it would be possible to calculate certain human action , it can also be possible to change or reduce the chances of success of a certain action. Modern advancements has introduced faster problem solving capability but it has some restrictions, which can be coped by the utilisation of human brain which has far better capabilities.The main concern of this paper is why to use AI and how it will revolutionize the mankind.

Keywords: *AI driven machines, emotion AI, subliminal effect, robots*

INTRODUCTION

Digital life is augmenting human capacities and disrupting old human activities. Code-driven systems have spread to more than half of the world's inhabitants in ambient information and connectivity, offering previously unimagined opportunities and unprecedented threats. As emerging algorithm-driven artificial intelligence (AI) continues to spread, will people be better off than they are today? The experts predicted networked artificial intelligence will amplify human effectiveness but also threaten human autonomy, agency and capabilities. They spoke of the wide-ranging possibilities; that computers might match or even exceed human intelligence and capabilities on tasks such as complex decision-making, reasoning and learning, sophisticated analytics and pattern recognition, visual acuity, speech recognition and language translation. Researchers said "smart" systems in communities, in vehicles, in buildings and Utilities, on farms and in business processes will save time, money and lives and offer opportunities for individuals to enjoy a more-customized future. Many focused their optimistic remarks on health care and the many possible applications of AI in diagnosing and treating patients or helping senior citizens live fuller and healthier lives. People were enthusiastic about AI's role in contributing to broad public-health programs built around massive amounts of data that may be captured in the coming years about everything from personal genomes to nutrition. Additionally, a number of these experts predicted that AI would abet long-anticipated changes in formal and informal education systems yet, most experts, regardless of whether they are optimistic or not, expressed concerns about the long-term impact of these new tools on the essential elements of being human. All respondents in this non-scientific canvassing were asked to elaborate on why they felt AI would leave people better off or not. Many shared deep worries, and many also suggested pathways toward solutions. The main themes they sounded about threats and remedies are outlined in the accompanying table. Overall, and despite the downsides they fear, 63% of respondents in this canvassing said they are hopeful that most individuals will be mostly better off in 2030, and 37% said people will not be better off. So, it is difficult to increase our still distance between here and decision making without first establishing the extent of subjective we conceive to AI. In what follows I will accept the idea that encompasses a large subjective component. In other words, without denying the social component of intelligence, we will consider a strong personal component underlying every manifestation of intelligent behaviour.

But, if we somehow create an environment where AI will be enough advanced to gain most people's faith. Now, the first thing will happen that people will start acting more disciplined. They would not only be be punctual during their work but they will also show better results. For instance, let's think AI has calculated a list of career choices for a person using the data collected from his aptitude, emotional behaviour, reaction time, etc. Now, it is possible that the certain person will find himself comfortable in his work, it is also possible that he will be more productive because he will certainly start enjoying his work for a bit.

METHODOLOGY

Emotion Recognition Using Facial Expressions (Busso et al., 2004, Zhao and Pietikainen, 2007): The basic idea of emotion recognition using facial expression is to segment facial images into various regions of interest. The common regions taken into account include movements of cheek, chin, wrinkles, eyes, eyebrows, and mouth. Different classification techniques are then applied to differentiate between different types of emotions. (Cowie et al., 2001) developed an intelligent emotion recognition system, interweaving

psychological findings about the emotion representation with analysis and evaluation of the facial expressions.

Emotion Recognition Using Body Movements and Gestures (Gunes and Piccardi, 2007): Ginevra et al. proposed an approach for the detection of four emotional states (anger, joy, pleasure, and sadness) based on the analysis of body movement and gesture expressivity. They used non-propositional movement qualities (amplitude, speediness, and variability of movement) to infer emotions and investigate the role of movement expressivity versus the shape in gesturing. Their proposed method analyzed the emotional behaviour based on the direct classification of time series and on a model that provides indicators explaining the dynamics of significant motion cues.

Estimation or prediction can be done with data analysis by using machine learning. (Preisach et al., 2008).In this research, data is analyzed by machine learning algorithms embedded in microcontroller. The process of data analysis is done in two phases; first phase is that when sensed data is computed by algorithms for predicting emotion and second when final predicted data output is collected to form training data. This chapter explains first phase in the following sections.

Subliminal Perception: The term subliminal is derived from the terms sub (below) and limen (threshold), and it refers to perception so subtle it cannot reach conscious awareness. Most of the research on subliminal perception is done on visual subliminal perception. For instance, one can flash words or pictures so quickly on a computer screen (generally faster than 10-15 milliseconds) that perceivers have the feeling they do not see anything at all. In other words, they are not consciously aware of the presented words or pictures. However, such visual stimuli are processed unconsciously, and they can have brief and subtle effects on our feeling and thinking. In addition, some research has been done on auditory subliminal perception. No reliable scientific evidence exists, however, for psychological effects of auditory subliminal perception.The idea of an objective "threshold' is misleading. No objective threshold exists for conscious perception. Whether a briefly presented stimulus reaches conscious awareness depends on many different factors, including individual differences. The threshold is merely subjective.

Effects of subliminal perception are generally small and not easy to establish in controlled laboratory research. However, a few findings are reasonably well established, the most prominent being subliminal mere exposure; Repeated subliminal exposure to a stimulus (for example a picture) leads perceivers to like this picture a little more. Effects of mere exposure have even been obtained for stimuli that were perceived for only one millisecond. Perceivers can to some extent infer the valence (is something good or bad?) from subliminal stimuli. This is shown in research on the subliminal perception of short positive (e.g., sun) and negative (e.g., death) words.

Subliminal perception is controversial mainly because of the notion of subliminal persuasion: The strategy that may be used by marketers or politicians to deliberately influence customers or voters subliminally. In 1957, James Vicary claimed that he increased the sale of cola and popcorn in a New Jersey cinema by subliminally flashing "Drink Coke" and "Eat popcorn" during movies. This however, turned out to be a myth. Perhaps because of the media attention subliminal perception and persuasion sometimes receives, most of the American population does believe subliminal persuasion to have far reaching consequences. However, although subliminal perception exists, research shows the effects to be minor and usually short-lived. There is no scientific reason to believe it can substantially change consumer behavior.

DISCUSSION

Machine take decision based on previous data records. With algorithms, the chances of errors are reduced. This is an achievement, as solving complex problems require difficult calculation that can be done without any error. Business organizations use digital assistants to interact with their users, this helps them to save an ample amount of time. The demand for user's businesses is fulfilled and thus they don't have to wait. They are programmed to give the best possible assistance to a user. Artificial Intelligence and the science of robotics is used in mining and other fuel exploration processes. These complex machines help to explore the ocean floor and overcome human limitations. Due to the programming of the robots, they can perform a more laborious task with extra hard work and with greater responsibility. Moreover, they do not wear out easily. Siri listens to us and performs the task in one tap. GPS helps you to travel the world. How can I forget the basic necessity? Food, clothing, shelter, and smartphone. They are the ones that predict what we are going to type, in short, they know us better than anyone. The best is the autocorrect feature, it understands what you are trying to say and present you the sentence in the best way possible. Have you observed that while you post a picture on social media, you tag people, but the machine automatically detects the person's face and tags that individuals? Same is when you work on Google Photos. Automatically, a Folder is created of the people with the help of their faces. Artificial Intelligence is widely employed by financial institutions and banking institutions because it helps to organize and manage data. Also, detection of fraud uses artificial intelligence in a smart card-based system. Logic above all! Highly advanced organizations have digital assistants which help them to interact with the users and save the need for human resources. Right program decisions can be taken if they are worked upon rationally. But, with humans, emotions come along. When artificial thinkers, there is no distraction at all. They don't have an emotional side, and that makes robots think logically. Emotions are not associated with them and therefore the mood doesn't hamper the efficiency. Thus they are always productive.

This is the best thing that artificial intelligence has done to humans. It's said that time and tide waits for none but, with medical applications of artificial intelligence, a wide scope application is present. Doctors assess patients and their health risks with the help of artificial machine intelligence. The applications help to educate the machine about the side effects of various medicines. Nowadays, medical professionals are trained with artificial surgery simulators. It uses application which helps in detecting and monitoring neurological disorders and stimulate the brain functions. This also helps in the radiosurgery. Radiosurgery is used in operating tumors and help in the operation without damaging the surrounding tissues.

As it is always said, every coin has two sides and so does AI.

No matter how smart a machine becomes, it can never replicate a human. Machines are rational but, very inhuman as they don't possess emotions and moral values. They don't know what is ethical and what's legal and because of this, don't have their own judgment making skills. They do what they are told to do and therefore the judgment of right or wrong is nil for them. If they encounter a situation that is unfamiliar to them then they perform incorrectly or else break down in such situations. Machines can't be creative. They can only do what they are being taught or commanded. Though they help in designing and creating, they can't match the power of a human brain. Humans are sensitive and intellectuals and they are very creative too. They can generate ideas, can think out of the box.

They see, hear, think and feel which machine can't. Their thoughts are guided by the feelings which completely lacks in machines. No matter how much a machine outgrows, it can't inherent intuitive abilities of the human brain and can't replicate it. All being said, the pros and cons of artificial intelligence being evaluated, it is up to the reader, user, and their perspective. AI and robotics will improve the way we think, the way we explore new horizons, whether space or the ocean. As the age-old saying goes, necessity is the mother of all innovations, so is the case with AI. Human beings know what they need and are getting increasingly better in defining their wants and quickly transforming this into reality. In the near future, things will happen so rapidly that we will see major changes and innovation.

CONCLUSION

Artificial Intelligence and the technology are one side of the life that always interest and surprise us with the new ideas, topics, innovations, products …etc. AI is still not implemented as the films representing it (i.e. intelligent robots), however there are many firms that has implemented AI to ease the product making process to reduce time to reach the level and to compete in market, like sometimes the robots that they show in TV. Nevertheless, the hidden projects and the development in industrial companies.

At the end, we've been in this research through the AI definitions, brief history, and applications of AI in public, applications of AI in military, ethics of AI, and the three rules of robotics. This is not the end of AI, there is more to come from it, who knows what the AI can do for us in the future, maybe it will be a whole society of robots.

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