



Recent trends & Innovations in Artificial Intelligence based Applications

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ABSTRACT: AI- a revolutionary world, has entirely captured our day-to-day lives. It is the unique combination of minds and the machines. With the past couple of years, there occurred gradual increase in Artificial Intelligence, spreading its root in almost all the fields. New inventions and advancements has been done which are based on AI. The applications of AI are not limited to certain area but from a minute thing to an innovative development, there exists AI. There are numerous technologies, gadgets which have been developed leading to a new world and even some new innovations yet to come. Thus it provides an automated path leading to a bright future. In this paper, we have presented a detailed survey of all the innovations and current trends in Artificial Intelligence.

Keywords: component; - Artificial Intelligence, Innovations, Advancements, Automated, Trends.

I. INTRODUCTION

The pace of scientific and technological advancements has been started from recent years. The concept and introduction of Artificial Intelligence in our daily lives has completely enhance the world to a new scale. The acceleration of innovations and new trends in this 21st century has ever more uses in all the fields, boosting the economic growth and development. The future of AI is basically a programme of physical and digital convening as well as showcasing [1]. The market of AI is flourishing day- by- day. The most important component of AI is the machines that exhibit intelligence which make them smarter than humans. Due to all these inventions, it becomes necessary to understand Artificial Intelligence in depth. In next section, we will give the overview of all the latest trends and innovations happened in AI field.

II. LATEST TECHNOLOGIES BASED ON AI

There are variety of inventions done in AI. A detailed survey is as under:

1. Tesla's Autopilot

Tesla's Autopilot is one of the great example of the automated revolution. It is the world's first AI powered driving experience. It is the semi- autonomous driving feature that includes speed adjusting, lane- change, automatic braking, collision and accidents prevention. In this advanced technology car using Artificial Intelligence, the person in the driver's seat is there only for the legal reasons. He doesn't have to do anything because the car is driven itself. For autopilot, Tesla

takes data from each cars using the new automated steering or lane change system and the uses it to train its algorithms. Tesla then takes these algorithms, tests them out and incorporates them into operating software.



Fig. 1. Tesla's Autopilot [3].

So, Machine learning is the way by which the computers can become Artificially intelligent and Tesla's Autopilot is an important technology coming in front in the form of AI.

2. Boxever

It is an intelligent customer cloud that depends heavily on machine learning to improve the customer's experience in travel industry. So it can reimagining the customer's experience through machine learning and usage of Artificial Intelligence.

Boxever activates the states around each customer clearly. It gives single contextual view of all the customers. Boxever is a brand based on AI using 1 to 1 personalization.

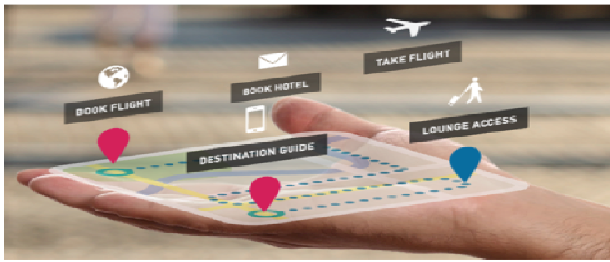


Fig. 2. Boxever [4].

3. Fin gesture

Fin gesture is the latest technology based on AI that is in the form of a smart ring, which translates the hand gestures into commands. This device is worn on thumb and then uses it to recognize each segment of every finger on hands and then taps into commands. It basically make use of Bluetooth to transmit the commands to another devices.

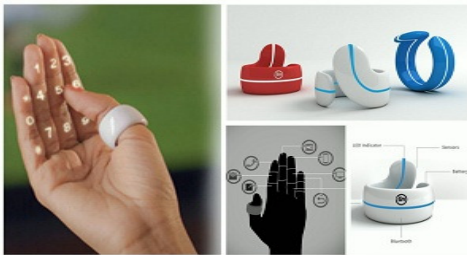


Fig. 3. Fin gesture [5].

4. AI robot

The robot developed in the world for performing difficult tasks is not just a robot but it is an AI.



Fig. 4. AI Robot [6]

It not just recognizes facial features but also knows our mood. The robot has named- Jia Jia. She can see the whole world as in the same way that humans do. We can ask anything to it. She understands what we say and what is its meaning. She controls all our connected devices with our voice, gives details about weather, news, plays music, schedule meetings, sets alarms, etc.

5. Vinci

Vinci is the first smart headphones with AI that can understand you. You only have to tell Vinci and it reacts accordingly. You can change tracks accordingly and also gives information about your large queries.



Fig. 5. Vinci [7]

6. AI Glasses

AI glasses have seen to be a great magic of Artificial Intelligence especially for the children suffering from autism[8]. The children suffering from this disease are not able to recognize the emotions through facial expressions. Autism glass are the wearable glass that uses machine learning and real-time social cues so that people suffering from autism can interact with each-other. Whenever a patient wants to use it, he simply wears it on his eyes. The glass have front facing camera which uses machine learning and artificial intelligence the recognize the expressions of other people. The wearable is connected to the Smartphone app so that patient's parents, professionals can check the amount of improvement in emotions recognizing capability of the patient.

7. Affectiva

One of the most important innovation in AI can be seen in emotional intelligence. Think for a while, what if technology could adapt to human emotions. The answer is Affectiva Affectiva is the emotion recognition software that brings emotional intelligence to the digital world. It doesn't only transforming how human interface interact with technology but how humans

basically interact with each- other. It is an automatic facial coding system which leads to optimization, prediction and evaluation. It knows how we feel from the look of our face. Thus it is bringing emotions back into digital experience.

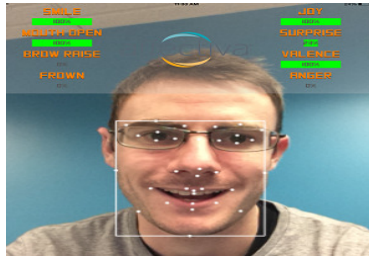


Fig. 6. Affectiva[9].

8. Alpha go beat's

Alpha go is a narrow Artificial intelligence, which is most widely used to play the board game Go. In 2015, it beats a human professional go player. It make use of Monte Carlo tree search to find its moves based on machine learning by Artificial Neural network by extensively training both human and the computer player.

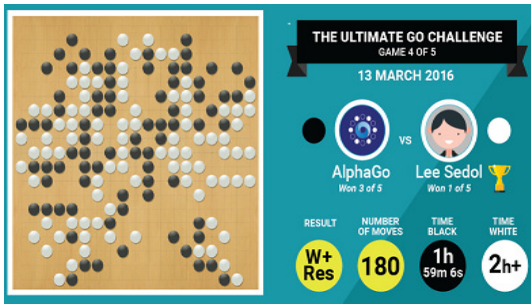


Fig. 7. Alpha go beats[10].

9. Cogito

Cogito is an expert system semantic intelligent platform. It is the technology that takes any type of text as input in any format and then performs a deep linguistic analysis by going through all the different steps needed for semantic analysis. It is an emotionally intelligent AI software for customer service that uses behavioral analytics to perform in- call analysis and perceive the emotion of clients through their operating patterns, verbal cues and other social signals.

It is based on a representation of knowledge known as Cogito Knowledge Graph. This software processes various abilities such as ability to read, comprehend, learn and understanding the meaning of words and

expressions. It becomes intelligent by using human experience and learning from the written knowledge.

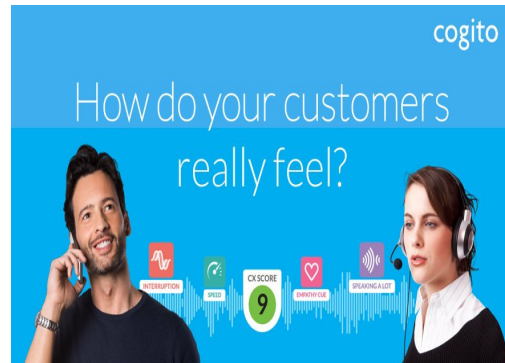


Fig. 8. Cogito[11].

10. Siri and Alexa

Siri is basically a computer program that works as an intelligent personal assistant and knowledge navigator. It is the part of Apple Inc's ios. In other words, it is the voice assistant of Apple. By the help of machine learning, Siri undergone a large series of brain transplants through shifting its silicon- powered mind to Ai powered mind.

After various attempts and trails, when apple started using machine learning, there occurred a dramatic improvement in Siri's voice recognition. Then using machine learning again and again, it gets smarter and began to understand our natural language. We can talk to Siri as we talk with our friends and it helps us to get various things done such as sending messages and play calls. It can show us the best route to any location as it works hand- free.

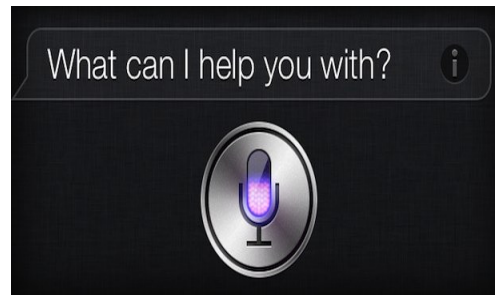


Fig. 9. Siri[12].

It can also schedule dates, set our reminders, find directions and give answers to all our queries. Same as Siri, another AI based technology is Alexa. It basically feels like an AI. She is the personal assistant that lives in cloud and always listening to us through a number of available physical devices that use their brain and comparably she can hear better than Siri.



Fig. 10. Alexa[13].

11. Pandora

Pandora's AI is one of the most revolutionary techniques that has great impact today. It is known as the musical DNA. Almost based on 400 musical characteristics, each song is manually analyzed by the expert team of musicians and it has also the track record for recommending songs that would otherwise go unnoticed but people inherently love.



Fig. 11. Pandora [14].

12. Sense Smart Alarm

It is known as sense with voice. Sense helps us to fall asleep, improves our sleep and wake-up. It is entirely based on Artificial Intelligence. It comprises of three capabilities- productivity, creativity, performance. It doesn't just monitor our sleep but understands it. So it uses Artificial Intelligence to make you feel better. It follows your commands.

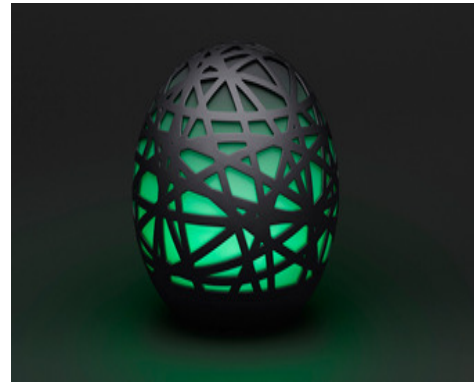


Fig. 12. Smart Alarm [15].

13. Wi-Fi enabled Barbie

Artificial Intelligence which has already spread its roots in various platforms has stepped to another innovative step. Many companies are playing to roll out AI-enabled toys that are designed for children as young as three. Mattel's Hello Barbie, which is powered by an AI platform, performs conversations between her and the child. It is so realistic that kids can't attempt to figure out whether Barbie is human or not. This Barbie remembers whole past of child and reacts accordingly.



Fig. 13. Wi-Fi Barbie [16].

14. Brania

Another most important advancement of AI is Brania which is known as the Artificial Brain. It is an intelligent personal assistant and automation software for windows PC that allows us to interact with our computers using voice commands in English language. Through Brania, it is possible to control our computer using natural language commands. Brania is not a Siri but like a Chat-bot and help to do tasks. It can understand automatically what you want to do and understands it.

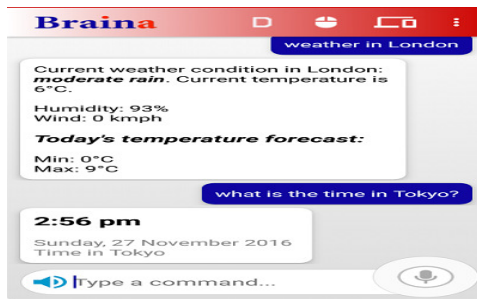


Fig. 14. Brania [17].

15. VIV

VIV is an artificial intelligence platform that enables developers to create an intelligent, conversation interface to anything [18]. To this real-world, it provides great capability to interact with devices, services and things everywhere and it seeks learning from the world.

16. Netflix

Netflix's new AI tweaks each scene individually to make video look good even on very slow internet. It uses Artificial intelligence techniques to analyze each shot in a video and then compresses it without affecting the image quality thus reducing the amount of data it uses [2]. Thus it does not only improve the quality of video to larger extent but also save data utility.

17. Real Fx

Real FX is an AI based revolution in R/C racings. It is the most realistic next generation racing system. Real FX uses Artificial Intelligence i.e. AI assist helps us to stay on the track but you have got to use your own skill to be the fastest driver in race. It can overtake your opponents, deal with track hazards and comply with pit-stop call-in. Thus, Real FX AI means it can read whatever race track you throw in front of them and both of you and car do not have need to learn.

18. AI- CD Beta Robot

Another most creative innovation of Artificial Intelligence is AI-CD Beta robot. As we have seen augmented reality and virtual reality in various platforms. Now an Artificial intelligence robot named above is invented by Japanese advertising and marketing agency leading to development of new commercials [19].

19. Smart Speaker

In this world in which we are going through headphones technology, a new invention is coming forward known as Smart Speaker. It basically treats emotions to play music. It automatically recognizes the mood and emotions of the person and then plays the

music accordingly. Thus, Mood Box is the emotionally intelligent speaker system that uses AI to pick up the best music to play. It basically uses emotionally intelligent program known as EMI. It learns different moods and then plays music accordingly.

20. Film buff Search Engine

As we know that it becomes a great challenge whenever we have to make search for a film without knowing its title. To handle this difficulty, a new search engine is developed known as Film buff. It is an intelligent search engine that uses Artificial Intelligence to process natural language and can analyze thousand of variables. The platform can examine thousand of questions and queries to find films. It took deep look into the content.

21. MurdochBot

Now-a-days Telegram is growing in popularity due to its multi-platform integration and encrypts able messaging. Telegram program has an open AI which provides ability to users to add Bot to chats. One of them is the MurdochBot. It is basically an AI program that performs sentimental analysis and suggests TV shows based on group chats.

CONCLUSION

From last few decades, a drastic advancement is seen in world of Artificial Intelligence not in only a specific field but almost all the fields. It has completely revolutionized the world. Thus it is providing an automated path leading to a bright future. But it has disadvantages too if incorrectly used. It is also very costly, difficult to manage, unemployment, etc. So, along with advantages of AI, it also can be dangerous if not properly handle with care.

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