A Review of Artificial Intelligence Products

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Abstract

Artificial intelligence is a very vast topic to discuss it consists of multiple subtopics and one of them is Artificial Intelligent Products. As we all know today our lifestyle is surrounded by machines with Artificial Intelligence Property which is not constant, it keeps changing and grows from time to time according to our needs to make our life easier. Some of the Artificial Intelligent Products which occupy a major role in our lives are "CHATBOTS", "ROBOTS", "VIRTUAL PERSONAL ASSISTANT", "AI EMAILS", "AI IN SOCIAL NETWORKING", "E-COMMERCE", "COMPUTER VISION" and many more. These all are found to be useful from the marketing, education, security, medical perspective, etc. Artificial Intelligent Products are so advanced that they not only work according to manually provided instructions but they also work via gestures, speech recognition, image/face recognition. AI is adapted by us to get good results. This review involves the general concepts of Artificial Intelligence Products.

Keywords: Artificial Intelligence, Artificial Intelligence Products, Chatbots, Robots, AI Emails Ecommerce, Virtual Personal Assistant.

1. Introduction to Artificial Intelligence and Virtual Personal Assistants

Artificial intelligence's biggest attainment is a natural dialogue between humans and machines. most of the companies. Adapted this technology and created various kinds of personal Assistants or we can say virtual Personal assistant e.g.: Siri, Alexa, Cortana Etc. They are found to be more helpful because they help users by spoken Interactions. Nowadays, VPA is embedded in Smartphones, cars, laptop Robots, Smart TVs, etc. These kinds of Al Products are found to be useful for Education, business, Security, healthcare systems. Now every company built their assistant like Google created google assistant, apple created Siri and Microsoft created Cortana. But everyone uses different approaches to improve their dialogue system [4].

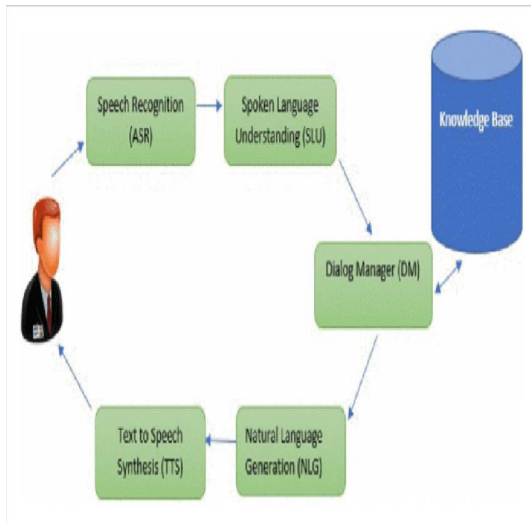AMAZON'S ALEXA   GOOGLE'S ASSISTANT   APPLE'S SIRI   MICROSOFT'S CORTANA

e.g.: Google's assistant by using DNN (Deep neural network) and machine learning is used to enhance Cortana. Some of the assistants use a combination of the machine learning algorithm and contextual memory. Components in the dialogue system used are:

1. Input decoder
2. Natural language understanding
3. Dialogue manager
4. Domain-specific
5. Response generator

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6. Output renderer and there are 6 main components in the general Dialogue system.

    1. ASR (Speech Recognition)
    2. SLU (Spoken Language Understanding)
    3. DM (Dialogue Manager)
    4. NLG (Natural Language Generation)
    5. TTS (Text to Speech Synthesis)
    6. Knowledge Base [4]

So, the dialogue system is one of the biggest evolutions in artificial intelligence products.

2. AI Emails

As we know the importance of email has grown exponentially in recent years - it helps us to discover new and interesting knowledge, communicates with our friends, colleagues, organization, and much more. In simple terms email is sending a letter without the use of paper, in other words electronically. There are some unwanted things we receive in our inbox like spam, trash, etc. But applications like Gmail and Hotmail have features to filter out the emails we receive according to our requirements. Email is also used to enquire and solve queries of the clients. The size (length) of an email has increased over the years. eCommerce platforms like Amazon, Flipkart, Alibaba, eBay, etc. use email to provide the bills of the products purchased by their customers on their websites. Then there is ANN (Artificial Neural Networks)

also known as the human brain that manipulates data from input to output feature. In ANN learning, one can avoid training and testing.

ANN is a model of functional features of neural networks; it has an interrelated set of artificial neurons. Training is dividing the connection weight. Validation of a system is prepared when the neural network has been trained and should be assessed before its real use.

3. AI in E-COMMERCE

Artificial intelligence is different from psychology because it focuses on computation.
It has two types:
1. Weak Artificial intelligence in this machine works like an intelligent human
2. Strong Artificial intelligence in this machineability is like a human, Natural language processing is the application of AI. It is done to analyze, also understand the computer language of human by computer application of artificial intelligence examples are:

    1. Gaming: As we know that nowadays machine can compete with humans in games with the help of artificial intelligence

    2. The expert system is developed to solve difficult problems in a particular domain, with the help of intelligence.

    3. E-commerce is buying and selling goods, services using the selling of goods and

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services using the internet and transfer of money and data to execute these transactions for e.g. Amazon, Paytm.

*B2B- it means the transaction of goods and sales that have conducted between two companies.

*B2 customer- it deals with business to consumer.

*C2C-the transactions of goods and services between consumers.

*Consumer to B- it is when the consumer makes their services or products available for companies to purchase.
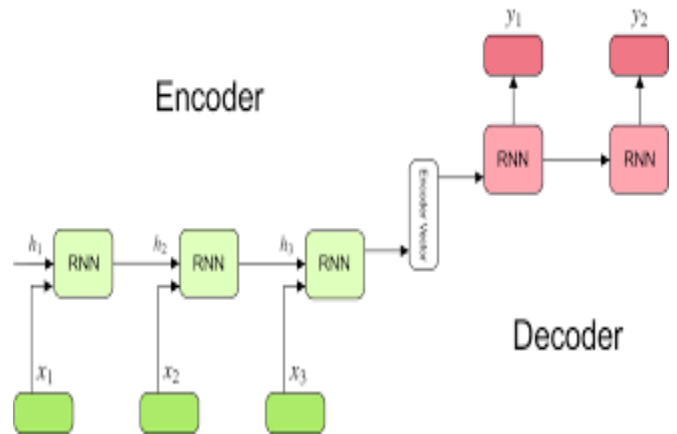

4. AI in CHATBOTS

Nowadays, in the world of machines, they have taken the place of humans to solve their problems. Just like that there is an AI product named "CHATBOT". Chatbots are basically a conversational system that is used to process human language. NLP (Natural language processing) and NN (Neural network) are used in it. Human language is not that easy than it looks, it took decades to find Natural language interaction with artificial agents on the internet. Various industries are using chatbots but the function of a chatbot depends upon how their creator designed it. cultural considerations like input preferences for voice-over text shared mobile devices, and blending of languages can also impact how a chatbot is used[us]. Chatbot

work upon the set of words, language, characters that are stored in its database but they are not that much advanced or smart to interpret and respond quickly and correctly to human language.

Chatbots can be classified into 3 ways:
1. Deep learning chatbot
2. End to end system
3. Sequence to sequence models[om]

The techniques used in chatbots are NMT (Neural machine translation) It uses NN (Neural network) for learning machine translation.

*Neural machine translation consists of 2 recurrent neural networks (RNN):

1. Encoder: It encodes the source sentence into a sequence of vectors.

2. Decoder: It defining a probability over the translation and decodes the target sentence.

One of the best chatbot which is developed in past 3 years is "SUPER AGENT CHATBOT". which is used in E-COMMERCE websites developed by cui et al[om]. It is a customer - buyer chatbot. This chatbot answers among a huge existing data source.

5. AI in Robotics

In today's world robots are taking place of human being in almost every perspective they found to be more efficient, fast, intelligent than humans.AI and robots become more common in everyday lives, they are likely to change the way value is co-created and experienced[k].the basic difference between a robot and an AI robot is that a robot work based on the set of commands given to it, but a AI robot work according to human needs and it then it responds quickly by their own decision making using neural networks. robots have become so smart with the help of artificial intelligence that they can absorb our actions, mimic our movements and even some robots can interact socially. a robot named "KISMET" which was developed at M.I. T's Artificial Intelligence Lab, it recognizes human body language and voice inflection and responds appropriately just like a new born baby. and there is one more human-like robot named "SOPHIA" and she got citizenship of Saudi Arabia. humanoid robots with artificial intelligence brought the biggest evolution in AI Industry.

6. Conclusions

In this review paper we have discussed about the artificial intelligence products their types and their need in our day to day lives. Artificial intelligence taken a special space In our industry, daily lifestyle, healthcare, security, education etc. Due to AI products most of the work done by machines instead of human.AI may well be a revolution in human affairs, and become the single most influential human innovation in history.

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