

Relative Study on Artificial Intelligence Interaction with Human Emotions

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Abstract – Artificial Intelligence is a multidisciplinary field whose goal is to making software which thinks intelligently similar to human activities and makes a lot easier to human to achieve their goal. There are some recent successes in Artificial Intelligence from computerized medical diagnosticians and systems that automatically customize hardware to particular user requirements. This Paper presents about, how does Artificial Intelligence interact with humans, Does Artificial Intelligence can understand the human emotions, what can be the impact of Artificial Intelligence on humans in upcoming years, and Does Artificial Intelligence can replace humans.

Key Words: Artificial Intelligence, computerized medical diagnosticians, Human Interaction, Human Emotions.

1. What is Artificial Intelligence

Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the humans react.

John McCarthy, who coined the term in 1956 at Carnegie Mellon University, defines it as "the science and engineering of making intelligent machines"[1].

Pei Wang does not believe that there is one fixed definition for AI. He lists five ways in which AI can be defined – by structure, by behaviour, by capability by function and by principle – these are in order of increasing generality and decreasing specificity [2].

James Vincent notes that one of the difficulties in using the term artificial intelligence is that it is tricky to define. In fact, as soon as machines have conquered a task that previously only humans could do — whether that's playing chess or recognizing faces — then it's no longer considered to be (a mark of) intelligence (known as the "AI Effect") [3].

1.1. Brief history of AI:

AI is not product of the 21st century. But it actually has much earlier roots, going all the way back.

The first of many steps towards AI was taken long ago by Aristotle (384-322 B.C.) when he set to explain about syllogistic logic, the first formal deductive reasoning system [4].

1950 Alan Turing published "Computing Machinery and Intelligence" in which he proposes "the imitation game" which will later become known as the "Turing Test." [5]

It may be said that Alan Turing's ideas for computational thinking lay the foundation for AI.

1952 Arthur Samuel develops the first computer checkers-playing program and the first computer program to learn on its own.

August 31, 1955 The term "artificial intelligence" is coined in a proposal for a "2 month, 10 man study of artificial intelligence" submitted by John McCarthy (Dartmouth College), Marvin Minsky (Harvard University), Nathaniel Rochester (IBM), and Claude Shannon (Bell Telephone Laboratories). The workshop, which took place a year later, in July and August 1956, is generally considered as the official birth date of the new field [6].

1.2. Human-AI Interaction:

Human- AI interaction commonly referred as HCI, While we might think that AI – human interaction is considered only we interact with robot but the fact is already we are interacting with AI, let's take example smart phones, while using Smartphone we are interacting with AI either we know it or not. AI-assisted Human Interaction, the driver of the interaction is a human agent, and the user's perception is that they are interacting with a person. The role of the AI is to provide assistance to the human agent in order to optimize and enhance their performance. For example, an AI solution assisting a contact centre agent might suggest a possible response to return in text or read out to a customer.

Several companies have recently explored the application of sequence-to-sequence models using Deep Neural Networks to formulate a response or multiple responses that an agent can adopt or edit. One of the great advantages of this setting for applying new machine learning algorithms is reduced risk of failure as the human agent maintains the final say on whether to adopt the suggested response or use another. In addition, human decisions to adopt reject, or edit suggested responses provide critical feedback for improvement of the AI models making the suggestions.

Another example of an AI-assisted Human Interaction is the application of predictive models based on user profiles and

interaction history, to support a financial advisor with suggestions they can make to a client, or assist a sales person in recommending the optimal strategy to take for up-selling a product. Yet further applications of AI empowering human agents include within-call analytics to track customer or agent emotion and provide live feedback to the human agent on their own emotional state or that of the customer.

Perhaps the best solutions for customer care will combine both humans assisting AI and AI assisting humans: Customers will first engage with automated virtual assistants that respond to their calls, texts, messages and other inputs, and human assistance will play a role in optimizing performance. Then, if the call requires transfer to a human agent, that agent will be supported by an AI-enabled solution which quickly brings them up to speed on the history of the interaction and can assist them in real time as they respond to and engage with the customer [7].

2. UNDERSTANDING HUMAN EMOTIONS USING AI:

In recent years, AI has significantly become part at detecting emotions in humans through voice, body language, facial expressions, and so on. For example, voice recognition AI software systems, are learning to detect human emotions through speech intonation, speech pauses, and so on, in same way that we detect changes in emotional moods of our loved ones, friends, or work colleagues. Recently, researchers [8] have developed a **deep learning AI program that can tell whether a person is a criminal just by looking at their facial features with an accuracy rate of 90%**. In 2016 Apple bought a start-up company that created software that can read facial expressions – called Emotient [9]. This could be used to make AI programs like, SIRI and Alexa, understand the moods of their owners.

2.1. Does AI become the part of our Daily lives?

“It would be naive to think we will not have human relationships with the Artificial Intelligence in our lives”

Dennis R. Mortensen, creator of the virtual meeting set-up assistants Amy and Andrew from x.ai, hosted a talk “It looks like a human, it sounds like a human” at Web Summit this year. Here the question is not whether machine interactions will be part of our daily lives. They already are and will be even more. [10]

From the last few years have been a dream run for Artificial Intelligence enthusiasts and machine learning professionals. These technologies have evolved, and are impacting millions of lives today. Countries now have dedicated AI ministers and budgets to make sure they stay relevant in this race.

2.2. What AI Can Do in future

In the Future, There Will Be No Limit to What AI Can Accomplish. AI is growing day by day from taking dangerous jobs to acting as a friend and taking care of senior people allowing them to stay independent. There is a possible that humans can completely depends upon AI from what they have to eat, to pick the dates, we can see the short film presented by Dust how AI helps to pick the date, at present we are seeing AI can predict the moods of human and acts accordingly, AI can be anywhere from cooking, to shopping, we can see AI successful running business to giving suggestions in politics, **“so it’s very much likely to say AI will bring new era of civilization”**.

2.3. Can AI be dangerous?

Researchers say that AI understands human emotions like love or hate but doesn’t show the emotions like love or hate so there is no reason to expect AI to become intentionally harms anyone. Let’s consider scenario how AI might become a risk:

1. The AI is programmed to destroy: Autonomous weapons are artificial intelligence systems that are programmed to destroy. It can be very dangerous if it falls in the wrong hands, then they can easily destroy entire world. That could be lead to an AI war that also results in dangerous impact. These weapons or AI couldn’t “turn off,” so humans could lose control of such a situation.

2. The AI is programmed to do something good, but what AI adopts calamitous method for achieving its goal:

This could happen whenever we fail to fully give detailed instructions to AI, which is strikingly difficult. If you ask a car to take you to the hospital as fast as possible, it might cause a chase by police, fine will be occur, AI is not doing not what you wanted but literally what you asked for. If a AI is tasked with a ambitious Geoengineering project, it might wreak havoc with our ecosystem as a side effect, and view human attempts to stop it as a threat to be met.[11]

A.I.SHA (Artificial Intelligence Simulated Humanoid Assistant) My Virtual Girlfriend is a web series presented by Arre (brand).Considering a scenario where AI develops a mind of its own then how the things take a turn for the worse [12]

3. CONCLUSION

In recent years, AI has significantly become part at detecting emotions in humans through voice, body language, facial expressions, and so on. For example, voice recognition AI software systems, are learning to detect human emotions through speech intonation, speech pauses, and so on, in same way that we detect changes in emotional moods of our loved ones, friends, or work colleagues. Recently, researchers [8] have developed a deep learning AI program that can tell

whether a person is a criminal just by looking at their facial features with an accuracy rate of 90%. **In 2016 Apple bought a** start-up company that created software that can read facial expressions – called Emotient [9]. This could be used to make AI programs like, SIRI and Alexa, understand the moods of their owners. Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the humans react.

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