

# **Proposal: Does humans develop a same emotion toward virtual entities?**

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## **Introduction**

Emotional bonds are an important, often a productive behavior in human society, it is a process of development of a closeness, interpersonal relationship between two or more entities (whether it be human or otherwise). More often than not, emotional bonds don't simply arise from an exchange of facial displays, but often emerge through the dynamic give and take of face-to-face interactions. However, in the early 2010s, we are currently seeing the rise of Artificial Intelligences (AI) that allow us human, to interact with them in the like of voice assistant such as Siri and many others. The idea of having some feeling toward a virtual entities aren't new, it has been part of science fiction trope for ages and with the advancement of AI [1], it is hard not to overstate the depth, breadth, or pace of change in virtual technology that has gone through for the past half-a-centuries and with the rise of AI. This begs a question, as the AI advanced further, can us human, develop a bonds with these virtual entities like how we do with normal human or pets? Can we feel that emotional, affective bonds with a computer? This research will attempt to answer the question by letting a participants interact with a chatbot and gather up their conclusions.

## **Motivation**

Emotions are fundamental to human and how we interact, it is a powerful thing that affect how we behave and with the advancement in computing and AI [2], Ich felt that we can leverage on those power of AI as we are relying on computer for our daily life more than ever before. Especially in our current situation, we work with computer day-in-day-out, the computer in today context can be considered to us, as our co-workers and sometime our partner for joy and entertainment. I also feel that this will benefit some people, people who are really lonely, or people who are not really pleasant to be around but they need that interaction feeling [1]. It's quite interesting to see how this pan out in the psychological side of thing as this is literal a "human-computer interaction".

## **Background**

The AI has come a long way, while it will not replace an actual human being anytime soon, it has been quite a progress in the recent years, especially in the past 5-10 years with the advancement in machine learning (ML) and AI, allowing the existence of Generative Pre-Training (GPT) model developed by OpenAI (a company specializing in AI) which now in its 3<sup>rd</sup> iteration (GPT-3), it allow for a human-like reaction and behaviour which allow us to conduct this experiment, other company like Google and Meta (nee Facebook) has also been the driving force in the world of AI.

Currently, at its current stage in its mainstream uses, it is sophisticated enough to replace some portion of customer services with a chatbot and making it convincing enough for the user to assume that they are talking to a human and in turn, reducing the need for labour. Other has developed a bot that will conduct a therapy with a patient. While this is distantly related to what we doing, it shows where the technology is at its current position [3].

Due to most of this technology being an open-source technology, it's easy for us to develop those chatbot and it allow us to simplify the development process and jump into the actual research itself.

## **Plan**

The 1<sup>st</sup> plan here is to first develop a chatbot that fits our needs using the widely available model to simplify that part of the development, once this portion is done, this chatbot needs to be tested to ensure that it works as intended and not skewing our data when a fault arises.

2<sup>nd</sup> plan, after testing is done, participants are needed to conduct this experiment, due to the current pandemic situation, most of the experiment will be conducted online, this is where we are going to use the chatbot in order to capture their feelings, this will be repeated several times a week. The participants will not be told that it is a bot talking to them to eliminate any skewness or bias from the data collection process. They will, however, be told about the experiment at the end of the actual experiment, for the number of participants, we will only use 2 participants and represent the 2 biological genders as this is a repeated interaction and allow us to measure the long-term effect.

Finally, all the data will be collected and analyzed which we can either reject or accept our hypothesis, a paper will be written to record our findings and conclude the research from there.

## **Describe the technology you will use**

The bot would be written in mostly in Python and Rust as it has good support for writing bots and also the aforementioned GPT-3 by OpenAI [4] and it will possibly use one of those online instant messaging applications as a place to interact with those as most of them have some support for bots.

## **Deliverables.**

The chatbot which someone may use for their next experiment, and the paper.

## **Future Works**

Affective computing is an emerging field, while AI certainly would not replace actual humans anytime soon, this research would give us an insight into the future of communication and this will be able to enhance our understanding and gauge where we are at now. With the data I collected in this experiment, it is hoped that it can be used to improve this field even further.

## References

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