



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 14, Issue, 03, pp.20968-20970, March, 2022
DOI: <https://doi.org/10.24941/ijcr.43202.03.2022>

RESEARCH ARTICLE

AWAKENING OR DREAMING, LIVING INSIDE A MACHINE

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ARTICLE INFO

Article History:

Received 24th December, 2021
Received in revised form
19th January, 2022
Accepted 24th February, 2022
Published online 30th March, 2022

Keywords:

Awakening, Dreaming, Living,
Machine, Reality, Virtual.

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ABSTRACT

Firstly I give an introduction of lives living inside a machine. Then I give the definitions of awakening and dreaming in a virtual reality. Secondly, I show 3 examples of situations : eating steaks, playing games, approaching to death, and show that some of them require awakening, while some of them forbid awakening. Thirdly, two important cases of computer program bugs are proposed : halting problem, infinite loop. I discuss the ability of detecting them, and make the corresponding awakening choices. Lastly I list points of how to prevent the bugs before running virtual reality.

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Citation: Weihan Huang. "Awakening or dreaming, living inside a machine.", 2022. International Journal of Current Research, 14, (03), 20968-20970.

INTRODUCTION

Definition of lives inside a machine (1)I. A: Lives in a machine live in a world of virtual reality. The sensors and actuators are connected to the virtual reality. And the mind processes the information gathered from virtual reality to act and change its mental states.

Sources of lives living inside a machine (1)I.B

- Moving lives from biology to machine
- Moving lives from machine to machine
- Create a new life using artificial intelligence inside the machine

Definitions of Awakening and Dreaming

- Awakening : think of the virtual reality
- Totally Awakening : think of the virtual reality, and transferred to another different reality
- Dreaming : do not think of the virtual reality

CASES OF AWAKENING AND DREAMING

Eating steaks v.s. Vegetarian problem

Introduction to fuzzy characteristics (2)1: Fuzzy characteristics is a phenomenon that, a concept has two states (A and B) which clearly belong to two different categories, and a small transition of states cannot change the category of these states.

However, the accumulation of large number of small transitions will move from the state A to state B. And it is hard to say which category the middle states belong to.

Example of fuzzy characteristics (2)1.1.4

Living form of objects: Some small materials are not living forms, but with the increase of the complexity and the functions of their structures, they are more like a living form. simple materials -> plants and germs -> .. -> human beings

The vegetarian problem (2)1.2.1

Vegetarians want to eat objects that are not of living forms. But according to the example above, there are many cases difficult to be judged as living forms or not.

Solution of vegetarian problem (2)3.1.3

Moving lives from biology to machine

- The machines "eat" electricity, no meat or vegetables will be eaten again. So the vegetarian problem in fuzzy characteristics is solved.
- We can simulate the eating meat and vegetables between virtual reality and the tastes in machine brains. So that we can keep the habit of eating delicious foods.

Problem of Vegetarian while Eating Steaks

If I am a vegetarian, but I am eating steaks, it seems a contradiction. The solution to this problem is to keep Awakening, i.e. Thinking of virtual reality. It is a simulation of eating steaks between virtual reality and the tastes of my brain. The contradiction is illusive. However, if I am not a vegetarian. When I am eating steaks, it could be bothering me if we keep thinking of that it is from virtual reality, not real steaks. Hence the solution to this problem should be keep Dreaming, not thinking of the virtual reality.

Playing games, like chess, monopoly, and mahjng

By this example, I think we can invent 3 types of virtual reality:

- A Natural Virtual Reality simulates the nature, so playing games is by throwing a dice naturally by random number
- A Happy Virtual Reality lets the player win most of the games, and give surprises to the winner
- A Experience-all Virtual Reality lets the player experience all kinds of situations, winning or losing. Players can choose which reality he likes before starting a virtual reality.

However, knowing the results in advance will decrease the interests of playing games. So we should forget the choices, and make ourselves Dreaming, i.e. Control the minds not to think of the virtual reality. Therefore, when winning I should feel happy, and when losing I should feel depressed, a normal mental reaction.

Being not afraid of death in virtual reality: If we are so old or sick that we are approaching the death, thinking of virtual reality can make us happy because after the death there will be another reality waiting for us. Hence the death in the current virtual reality is not a real death, so we are not afraid of the death in the virtual reality. Therefore in this case my answer is the choice of Awakening. Life is the most important thing we have, we are happy if the end of life in virtual reality is not the real death.

BUGS IN VIRTUAL REALITY: Bugs could happen in any computer programs, so Virtual Reality could have bugs also. By the theorem of undecidability (3), there is no general algorithm that can check program bugs in advance. Famous

undecidable problem is the halting program. i.e. taking a program P as input, we cannot know if P will halt or not. In the following, I discuss 3 cases of bugs in virtual reality, and their corresponding Awakening or Dreaming.

Null pointer exception: A null pointer exception means when a variable should contain an object, but unfortunately it contains no object, i.e. it contains no value. It is a programming error such that the program will halt unexpectedly. However the program will terminate, so we can process the situation when the program halts. It is a serious problem, the machine and hence the virtual reality cannot continue to work. Therefore, my choice to this case is Totally Awakening. By definition I.C.2. Totally A wakening means thinking of the virtual reality, and transferred to another different reality.

Array index out of bound: Array index out of bound means the array index is larger than the length of an array. It is a programming error such that the program will halt unexpectedly. So similar to the case of null pointer exception, the machine and hence the virtual reality cannot continue to work. Therefore, my choice to this case is to escape from the current virtual reality, i.e. Totally Awakening.

Infinite loop: Infinite loop means we are inside a loop again and again, and forever. It is important that detecting a loop no matter in compile time or run time it is undecidable. It is programmer's error such that the program cannot halt. There are almost no ways to rescue this problem. Because being undecidable simply means that we don't know if we are inside a infinite loop or not. And it just loops and does not halt. Not like the previous problems that will result in halting the programs.

One way to solve this problem is to keep the expectation time for each activity. A timer schedule will work at the expectation time to check if the activity ends or not. If not, then it will report an infinite loop error. So on the safe side, a choice of Totally Awakening will be made. Because expectation time must be accurate and tolerable, it will require some common senses to be tolerable. So it would be safer if there is a guard helping to take care of the time out beyond the expectation time. The guard has more accurate ability to judge if it is an infinite loop or not.

SOME WAYS TO PREVENT PROGRAMMING BUGS

- Compile each program to get static check for programming errors.
- Do unit test for each component of programs.
- Do run time check for the whole program.
- Check codes with codes from different people.
- Check codes with old codes.

CONCLUSION

A good choice of Awakening or Dreaming is important for the quality of living in a virtual reality. For the cases of eating steaks while I am a vegetarian, I need keep Awakening. However, if I am eating steaks while I am not a vegetarian, I need to keep Dreaming. For the cases of playing games, we need to keep on Dreaming. However, when approaching the death in virtual reality, we need awakening to help not being afraid of death. And while encountering the program bugs in

virtual reality, we will choose a Totally Awakening. Lastly I give some suggestions for preventing program bugs.

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