Summer School 2022 - "Exploring the Foundations of Science and Beyond"

Poster Presentation Guidelines

Theme for poster presentation: Boundaries of Science and Spirituality

General:

- Content should be divided into various sections
- Proper references has to be added
- Illustrative images addition is recommended

Content Related Hints:

- Pick any one fundamental issue/limitations in any field of science or mathematics.
- Thoroughly focus on the systematic presentation of the above chosen issue/limitations from a basic conceptual levels.
- Add one or two examples describing the fundamental limitation of chosen scientific concept.
- Have to highlight what is the thing known, unknown and unknowable about that concept in present day scientific framework.
- Can give thoughts or angles of ideas how spiritual concepts would emerge from the contemplation on the fundamental limitations of the chosen scientific concept.
- **Hint: Read founding fathers of science and mathematics books in your chosen scientific field**
- For searching topics: you may take hints from the summer school topics mentioned in the website.

Logistic Related:

Author Name & Email: Author name and Email with current affiliation should be added below your Title of the poster (following standard academic convention).

Poster Size: Recommended: **Landscape orientation** - Dimensions (36" tall x 48" wide) or A0 size (33.1" x 46.8")

Font Size: Minimum recommended text sizes are: 85 pt font for the main title, 36 pt for subheadings, 24 pt for body text, and 18 pt for captions.

Font Styles: Pick two complementary fonts to use. Best choice is to use one serif font and one sans-serif font. Use one font for all titles and subtitles, and the other for the author line and body text.

Font Colors: The most effective and legible posters generally stick with three colors: a text color that approaches black, a near-white or muted background color, and an accent color.

Image Colors: Can use any color(s) as you like.

Presentation:

Print: **Please bring yourself a physical poster.** Probably no facilities for printing posters will be provided from our side.

Presentation Date: Your specific presentation date will be communicated by the organizing team.

Evaluation: Our poster presentation committee would visit your poster and evaluate it accordingly by questioning various aspects of your poster like scientific details, scientific accuracy, depth of focus on fundamental problem, highlighting limitations, proper references, etc...

SS-2022:001

MAN AND MACHINE

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This is a sample poster – for better visibility, use the same fonts sizes used in the poster and do not change the page set up: 35" x 43". Please download the guidelines from the download menu on the conference website.

ABSTRACT

Computers can beat world chess players, control satellites and spaceships thousands of miles from earth. **H**uman beings on the other hand are gifted with creativity, that makes them remarkably distinct and superior to even super-fast computers.

The paper addresses logical scientific arguments that describe the behaviour of artificial intelligence (AI) to think, act, understand and behave as conscious entities. All these arguments subsequently indicate the lack of concrete decision making ability for machines.

The paper also provides insights from Vedanta to outline remarkable distinctions between conscious and mechanistic intelligence.

INTRODUCTION

1996: Gary Kasparov defeated Deep Blue, IBM's Chess Computer

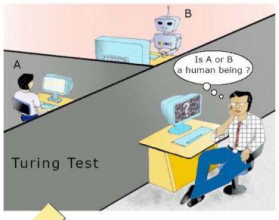
1997: IBM's Chess Computer defeats Ga Kasparov.

Kasparov suggested that humans may have helped the machine during the match.

The algorithm was modified in be en games to understand Kasparov's playing style d avoid a trap that the AI had fa fore.

Mechanistic proce g throug AI though fa does not constitute th ing or i lligence.

MACHINES ACTING HUMANLY



AI m ines would fail to generate correct emotional responses when interrogated by well-trained judge.

No computer so far has passed the Turing test.

MACHINES THINKING HUMANLY

WORD GAME: According to AI, using c in set of rules, the words "CARPET" and "MEAT" a rded equal, and the words "LAP" and "LEAP" are gai d to be unequal. However, none of these pairs ha any equality nor inequality relatio as understood the machine.

AI performance is good with inform on ga (such as Chess). However, a ame such as Po ke n n rfect information gam hat in olves bluffing, annot be ll performed by AI hen compared to huma s.

CA MACHINES BE CONSCIOUS ?

Objections to possibility of intelligent machines:

i) Argument from Disability: Eg: Machines do have kindness, friendship etc.
ii) Mathematical Objection (Goedel's theorem): Machines cannot establish their truth of existence where as humans can.
iii) Argument from Informality: Human behaviour cannot be captured into a simple set of rules.
iv) Argument from Consciousness: Machines are unaware of their own mental states and actions.
v) Chinese Ball Room Argument: Just carrying out the steps of a computer program does not guarantee cognition.

CAN MACHINES BE CREATIVE ?

Most AI models of creativity only explore spaces, not transform them, as they do not have self-reflexive maps enabling them to change their own rules.

Inducing creativity using heuristic strategies or through "creativity training" has very limited success.

AARON, is a 20 year long project by H. Cohen in machine creativity, producing original art work. Cohen conveys that AARON is not truly creative. He conveys that "Program can be written to act upon anything the programmer wants", but that's not the same as the individual human acting upon what he wants himself"

INSIGHTS FROM VEDANTA

- Consciousness uses brain as its computing instrument, just like we use paper or a calculator.
- Human intelligence not produced from Mechanistic process. It is property of the conscious living force within the body, the spiritual particle, soul. Human beings have advanced intelligence than animals and all life forms are intelligent to various degrees.

CONCLUSIONS

➢ **A** broad outline of AI is presented to defy the claim that one day machines will have characteristics like man.

➢ **T**here is a fundamental difference between man and machine and this gap can never be bridged.

➢ **I**nsights from Vedanta provide proper guidance and direction to humanity. Man can understand the purports of Vedanta where as Machines cannot.