Panel Session #34

Artificial Intelligence as a Tool

Organizer: Takayuki SUZUKI (The University of Tokyo)

General description: There is no doubt that Artificial Intelligence is one of the most important technologies of our time. What we usually have in mind when we argue ethical and legal issues in AI is AI as an autonomous agent with human-like general intelligence. If we see AI as a tool, however, there are various other possibilities for AI. In this session, we want to examine the possibility of AI as a tool theoretically and philosophically. Suzuki will compare two conceptions on AI, AI as a substitute for human intelligence and AI as a complement of human intelligence. Shibata will examine the dispute between these two conceptions in the history of AI research. Wesugi will give an analysis on AI through a comparison between club-type instruments and pot-type instruments. Tachibana will examine the possibility of AI as a tool to support better moral judgment of human beings.

Talk1

Title: Two Conceptions of Artificial Intelligence

Speaker: Takayuki SUZUKI (The University of Tokyo)

Abstract: Artificial Intelligence research has been considered as a project to create an autonomous agent with general intelligence that is close to/equal to/superior to human intelligence. The attempts to create such an agent, especially ones based on a classical approach on AI, however, have faced various theoretical difficulties. Though recent AI researches based on deep neural networks succeed in overcoming some of the difficulties, it will take some time, it seems, to create an intelligent agent that is equal to human beings. There is another conception of AI, however, that AI is an intellectual tool to complement and enhance human intelligence. According to this conception, AI need not necessarily be general nor autonomous. It need not solve intellectual tasks in the same way as humans do. In this talk, I will argue that it is AI research based on this second conception that will be more fruitful at least in a short term and socially more important. I also will show concrete examples of AI research on the second conception.

Keywords: Artificial Intelligence, tools, enhancement

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Talk 2

Title: AI vs. IA : The Real issues hidden in the struggle

Speaker: Takashi SHIBATA (Hokkai-Gakuen University)

Abstract: There is a view that the development history of a computer could be considered as the rise and fall of two camps: autonomous intelligent machine (AI) vs. intelligence amplifier (IA) as a tool. In fact, there is a clear difference in the vocabulary used by the development leaders in early days. While John McCarthy and Marvin Minsky saw a computer as an automaton that "substitutes" for humans, Douglas Engelbert saw it as an instrument that "extends" human abilities. These two vocabularies, “substitution” and “extension”, were not limited to the development scenes of it, but were also introduced in various science fiction and future predictions. The former genealogy has given rise to the "singularity" theory, which discusses human "extinction", and the latter genealogy to the "Homo Deus", which means superhuman or “post human”. Before deciding which vision of the two is appropriate, I will point out defects common to both camps by clarifying that these vocabularies have the same root, and they are two parts of a whole. Based on the above, I pose real issues that should be addressed in the discussion about AI and IA.

Keywords: *Phaedrus*, extension, substitution

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Talk 3

Title: Considerations on Analysing Relations Between Humans and AI technologies Based on Archetypes of Instruments — Club-type and Pot-type

Speaker: Shigeru WESUGI (Waseda University)

Abstract: This talk considers how humans - AI technologies relations can be analysed from the perspective of instrument. Therefore, the speaker focuses on the archetypes of instruments – club-type and pot-type instrument (Kenzo SAKAMOTO, 1975, Kenji EKUAN, 2000).
The club-type instruments include from primitive stone knives and spears to modern machine tool and power shovel. The club-type instruments let users transform a shape of an object including straining and cutting off the object. The users can directly work on the object through reflecting an intention.
Meanwhile, the pot-type instruments include from stone dish and clay vessels to clothes and farming ground widely. The pot-type instruments preserve an object by reducing external influence, or mature an object by maintaining an appropriate environment. The users can work on the environment around the object not directly on the object. Therefore, the users often delegate the instruments to work on to the object.
Which of types are AI technologies? AI technologies analyse images, voices and texts by reading data in a sector and tuning variety of parameters. This working process indicates AI technologies are included in pot-type one inherently. Recently, such process has become a black box and the users can use it as if they utilized a club-type instrument.
As for pot-type, gradual cultivation in a frame and delegation of users are emphasized rather than shaping the object directly. The speaker analyses the humans-AI technologies relations based on this perspective and additionally considers a design approach of combining both types complementarily.

Keywords: archetype of instrument, club-type, pot-type

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Talk 4

Title: Artificial intelligence and Human Moral Virtue

Speaker: Koji TACHIBANA (Kumamoto University)

Abstract: Artificial intelligence has been equipped with various devices for supporting human social judgments. Although such equipment has rapidly been embedded into the different aspects of our society, such as medical care, industries and education, any discussion can hardly be found about the ELSI of AI for use in *moral* education. If cultivating citizens' morality has a substantial contribution to their society, AI for use in moral education must be one of the genuine concerns for society. This presentation discusses possible types of AI systems for use in moral education and examines their ethical, legal, and social implications (ELSI). First, a brief survey will be provided about the current situation concerning the AI for use in education. Second, the notion of moral will be analysed and formalised by using the notion of virtue, based on virtue ethics. Third, some existing proposals for Al for use in moral education will be examined. Fourth, an alternative will be proposed, and their ELSIs will be examined. It will then conclude that AI can have a significant contribution to moral education, and their ELSI must cautiously be examined.

Keywords: virtue, education, ELSI

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