BOOK REVIEWS

Nils J. Nilsson
The Quest for Artificial Intelligence: A History of Ideas and Achievements
(New York, Cambridge University Press, 2009),
562 pages.
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Since the introduction of computer technology into our lives, the most important subject of debates has been on the problem of artificial intelligence. The possibility of a being similar to a human being that will be able to model him, and that even will outdo the possibilities of human beings, is an important point of the discussions. Accordingly, artificial intelligence, which is intended to be expressed as a programming language, is evolving to be a social phenomenon as it advances to become an indispensable aspect of our lives. Let alone its use in our cell phones, computers, gadgets that run our routine household chores, and as a reference point in analyzing social phenomena, it also has an essential role in many aspects of life that we do not even pay attention to, yet drive our lives.

Being an indispensable part of our lives, it is understandable that technological developments centered around artificial intelligence also have social-philosophical dimensions. Concerns about machines assuming human abilities point to a factual situation that we frequently come across. This means that in addition to being expressed factually, it also bears a feature in terms of value. In today's world, where we live in a state of being in, where human life and artificial intelligence form an integrity, we encounter many exemplary situations related to artificial intelligence. Examples such as granting citizenship to robots, or the world of virtual reality and emotional communication networks established by its characters, and marrying a character that gained reactivity through programs of the world of virtual reality are pointing how far artificial intelligence has stretched to affect our lives today. Having in mind that it is still in its infancy phase, the future of this technology brings forward an inciting flock of queries.

Besides the fact that it is a technology rendering our lives easier, when considering the social dimension of artificial intelligence, it obviously becomes a necessity that this

field should be a subject of scholarly studies. It can readily be said that it should be examined also by social sciences rather than by purely technology-science studies.

Conducting a study that points to the issues which needs to be discussed with priority, such as the possibility of artificial intelligence to ease human life technologically, its anthropological modelling of human possibilities, and its sociological position within the social structure will provide ease for the reader in terms of interpretative and comprehensive aspects. This also requires a historical account of artificial intelligence. At this point, questions like what is expressed by the term of artificial intelligence, what is intended by it, and what is expected of it need to be addressed and an analysis need to be provided based on its historical account.

In addition to the contribution of the sociological-technological dimension of artificial intelligence to human life, there is a second aspect to be discussed based on its definition. It is at this stage that philosophy comes into play. Is it possible to produce something (a robot or program) that can think, reason, make instant decisions and exhibit unpredictable behavior like a human being does? This seems yet to be one of the sub-objectives of artificial intelligence studies. Nilsson, in his book *The Quest for Artificial Intelligence: A History of Ideas and Achievements*, employs a style which tries to interpret these aspects of artificial intelligence.

The book first presents a brief history and brings forward an archaeological approach to the discussions of artificial intelligence. Though the terminology is not the same at the time, he takes the discussions all the way back to the Ancient Greek period with reference to the idea of modelling of human beings. He explains the existence of the machine and the efforts of technology in terms of facilitating human life and quickly brings back the discussion to this day. To speak of human existence authentically, we need to refer to his ability to learn. In terms of philosophical debates, revelation of existence of the knowledge of mind or systematization of the thoughts are based on learning through experience. For this reason, the emergence of possibilities for the human being requires a parallel progression with learning skills. The discussion of whether the possibility of human learning and of making additions on this learning can be realized by artificial intelligence is a subtopic of the book. The main topic of the book, however, is whether a programming language can develop its own learning skills and thereby assume an autonomy.

Nilsson has been a professor at computer engineering department at Stanford

University for many years, and has served on the editorial boards of two internationally renowned journals on artificial intelligence and cognitive sciences. His studies focus on neural communication networks, computer learning programs and artificial intelligence. The original edition of the book was published in 2009 by Cambridge University publications in 562 pages. It is available online in English and free of charge also at https://ai.stanford.edu/~nilsson/QAI/qai.pdf. As the main focus of his studies is artificial intelligence engineering, this is an important source book.

It is well accepted that artificial intelligence literature, which is based on many different fields such as mathematics, biology, physics and sociology, is in its early stages of development. Since many hypotheses of artificial intelligence put forward are yet in the process of theory building, the level of contribution to our future is unpredictable at this stage. Hence, there are many negative scenarios. These scenarios suggested even by well-known scientists claim that artificial intelligence will destroy humanity and nature in the future because we do not know to which direction it will go and how different groups will utilize it. Despite these adverse scenarios, it is obvious that this technology will continue to develop further and be an indispensable part of our lives.

Written by Nilsson, a professor of engineering -an important discipline for artificial intelligence studies- at a prestigious university like Stanford, the book serves as a reference point for artificial intelligence studies. It deals with sub-problems of artificial intelligence in eight main subheadings. Each subheading was written using a sequential writing method, centered on a specific question. The sequential structure is reflected in the whole book and provides the reader with ease in understanding the work. In the same way, each subheading does not overwhelm the reader in a theoretical discussion, instead they provide a historical account of the question being addressed as a problem. For the readers who do not have enough knowledge about artificial intelligence yet interested in this field, the sequential and brief accounts method will be attractive. Considering the fact that this is a study that may make significant contribution to the reader's knowledge and interest, it can well be said that it is a good book for both academic and public reading.

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