Kevin Warwick, known widely as the first human cyborg, has written a clear and coherent introduction to the problems of artificial intelligence. The book is intended for non-professionals and may be used as a guide for this rather complex subject. The main field of interest concerns contemporary AI, so that the readers are provided with strong basis of understanding ongoing research. Great scaffolding for this is given by appending key terms and literature for deepening one’s comprehension of the subject at the end of every chapter. Nevertheless, many question are left unanswered – this textbook requires a reflective approach, entrusting the brave with not only an overview, but intellectual nourishment as well. Hence, I would recommend this book to humanists, who can thereby learn how contemporary technologies are related to artificial intelligence and the distinct research paradigms of technology. Warwick makes it an appealing read by posing meaningful questions concerning the future and placing important issues between the lines. On the whole, this is an unusual and intellectually compelling textbook.

The history of AI research presented in the textbook has all the proportions needed – it focuses on the most important events for the development of AI. Metaphors help to memorize breakthroughs; titles refer to the dark ages, the renaissance, or briefly show the basic difficulties and goals en route.

It is important to note that Warwick, showing various definitions of a cyborg, focuses on the one according to which a cybernetic organism is created by the fusion of two brains (p. 11). In conventional wisdom, a cyborg is still an equivalent of
some form of implantation, not cooperation. When the issues are addressed in such a way, it could help people to cope with undergoing the cyborg revolution in which industry produces new implants and prostheses, which are used just as any other external human extension. On the other hand, one problem of cyborg intelligence is not touched upon: are cyborgs more intelligent than humans? On what terms? Such issues may be just coming into the public debate as cybernetic prostheses are more widely used by people in medicine, the war industry, the market and by media gadgets.

A very interesting thought experiment relies on imagining oneself as an alien life form (p. 18). This alleviates some problems with defining intelligence – it is not so simple to state what intelligence is at any level, especially if computer intelligence is capable of mimicking advanced human intellectual operations. Warwick argues that from the perspective of computational power increase, there is a tendency towards describing intelligence in terms of emotional and spiritual factors.

At the same time, the author is cautious not to make naïve comparisons between human and machine intelligence (p. 29). Thus, he proposes to scrutinize the basic procedures of classic AI. Using short examples of algorithms, he helps readers to imagine how these machines “decide.” This is demonstrated without an additional introduction to programming languages. Without technophilia (love for technology is easily traceable in Warwick’s ideas) or technophobia, Warwick attempts to give intuitive answers to what machine learning or the creation of rules is. We are made to notice the inconsequential distance between AI and the life of an everyday user. Everyone can think of numerous cases in which AI exists: in social media, search engines etc., machines are learning from the behaviour of their users. A human is being traced constantly and on the basis of his past actions the machine creates suggestions and shortcuts for him or her. The author himself does not name such examples, but a short presentation of key terms for AI opens up associations with everyday life.

There is also a chapter entitled the “Philosophy of AI”, in which Warwick assesses the main problems with definitions. Unfortunately, it is very concise, but for non-professionals it gives an overview of the fundamental debate concerning the relation between intelligence and understanding. For more philosophically minded readers, the arguments will be unappealing, yet they are crucial because they explain how AI provoked philosophical engagement in the matter. It is not Warwick’s inclination toward speculative and abstract thinking, but rather the necessity to solve basic problems concerning human functioning. Thankfully, in another chapter (on modern AI) the reader can easily comprehend the distinction within evolutionary algorithms – basic brain functions that are emulated by AI software.
Robots are also a topic which Warwick discusses in depth. His starting point is a speculative and futurological vision of “cultural human brain cells as the AI” (p. 124). Similar statements are distributed across textbooks – the author cannot fully control his urge to predict the future development of technology. Robots, in his view, are a different type of the AI – they have their own set of rules, procedures, hardware and software. The human gesture of creation is enabled by cellular automata. Warwick shows those phenomena from the plane of computation, biology and new media. Especially the last one is crucial for understanding the nature of so-called collective intelligence, in terms of other forms of A-life. We can draw an interesting analogy between collective intelligence and artificial forms of life, questioning de novo the relation between the human and its technological environment, especially as it is saturated with a plethora of machines that operate on the sensory recognition of people. Warwick presents, using basic terms and descriptions, how machine sensing works, from visual to haptic modes.

Even though this book is wonderful, the reader might become confused after reading about machine sensing, due to the lack of ending, or summary, and being left with just a dictionary of key terms. A proficient writer such as Warwick should provide a conceptual ending, even if it is a textbook that might be read without any chronology (another positive aspect of the book).

The main value of *Artificial intelligence. An introduction* lies in presenting difficult subjects e.g. expert systems, robotics and so forth in a concise way, focusing on problems with present and further development. The manner in which he does this makes the whole narration intelligible for non-professionals. Without overly-extending his ideas concerning future progress, he refers to earlier research which led him to the conclusion that there is no real progress without causing problems.

In my humble opinion, the main message of the book is as follows: understanding how artificial intelligence works in various fields of application does not result in technical knowledge, but in posing questions on the aim we desire to achieve as a culture and as humanity as a whole. From clearly showing that the reason HAL (the computer from the science fiction movie *2001 Space Odyssey*) was never invented by humans is that humans never wanted to invent it, to talking about the research, development, threats, and opportunities associated with artificial intelligence, Warwick argues we should not focus merely on the representations presented in science fiction visions of the future, but rather ask: is this the future that we are planning?

I would recommend this book for anyone interested in the problems facing contemporary humanity, because even at this very instant, when my word processor is autocorrecting my input, I am dealing with the presence of artificial intelligence. Is it a “real” or “strong” AI? Is using a word processor making me a cyborg? I suppose
the answer is ‘yes’ as my biological brain is connected with the artificial brain of my computer. I personally find the question about cyborg intelligence inspiring and the book triggered my curiosity for further study, even if I think that this book is not inspirational as such – rather it is simply written and by addressing important problems and gathering different perspectives it is an opportunity for inspiration.

This textbook might have been a product of a cyborg intelligence itself – would it be a sufficient reason for the existence of cyborgization? The importance of Artificial Intelligence. The Basics is that anyone can ask such a question and while pondering over an answer, understand something more from the ongoing process of technological globalization.