



# Robot-proof: higher education in the age of artificial intelligence

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## BOOK REVIEW

**Robot-proof: higher education in the age of artificial intelligence**, by Joseph E. Aoun, Cambridge, Massachusetts, MIT Press, 2017, 216 pp., £19.95 (hbk), ISBN: 9780262037280

If a book can ever accomplish in leaving a reader with a lingering aftertaste, then Aoun's book is the one. Albeit offering a bittersweet flavour, this gem of a book provides a vivid portrayal of the calm before the storm. It is a known fact that evolution is characterised by extinction. Invariably this book alludes to an approaching Artificial Intelligence (AI) driven cultural evolution that, as I am writing, is unwrapping itself and which in the foreseeable future will unleash and batter our beliefs in Higher Education (HE) with full force. Originally, I assumed that this book was directed to universities, academics and educational policy makers. Now I believe that it is a valid eyeopener to anyone interested in surviving in style in the rapidly developing digital reality. This book offers a valid challenge to the status quo and fragile sense of false security that HE has wrapped itself in but which certainly must change if universities and other HE institutes are to remain relevant both in the immediate and long-term future.

The assertion that schools and educators have to prepare their students for jobs that have yet to be created has now become a meme, loosely employed in various talks that I attend and literature that I read. Yet, rarely and never to such an extent (and I for this compliment the author), have I been provided with reachable and down-to-earth solutions on how to embrace, complement and ultimately grow from this same threat that AI poses, especially to white-collar professions.

I perceive the book as the representation of two sides of the same mountain. To see the outcomes, the mountain has to be climbed up on one side and down the other. Thus: the reader firstly, has to endure an uphill and substantiated bleak setting which, supported by well-expressed and authentic facts, made me wonder and twist in my own conscience if in employability terms an essentially doomed and disposable service-oriented white-collar workforce would ever see the light at the other end of the tunnel. From the first instances, the erosion of white-collar employability is well laid out by the author through exploring the ability of computers to learn from data instead of explicit programming. Thus, machines, and more so intelligent systems that can reason and think, that do tasks faster, cheaper and better will inexorably drive a substantial fraction of white-collar and knowledge workers out of a job.

In the second part, Aoun starts by banking on the fact that history has a tendency to repeat itself. The author therefore initiates his retaliatory arguments by drawing on well-established facts and records about how, in its transformative capacity, education was instrumental in embracing change to successfully equip workers with the required qualities for the demands of the previous industrial revolutions. But that is only the beginning. Reminiscent of a sense of mastery and with confidence in what he has to say, the author draws upon a wide knowledge base that ranges from Marx to Buffet, to penicillin, the ice bucket trend, railway, airline and pharmaceutical industries, to express how HE has to evolve so as to remain significant. Parenthetically, it is intriguing how Aoun also dubs AI's calculated reasoning and core strength as a limitation, latching, hinging and ultimately conceiving this Achilles' heel as an opportunity not to be squandered if HE is to remain meaningful for the

future. Thus while intelligent systems are very good at gathering facts and can map knowledge into recognisable problems to improve 'Near Transfer Capabilities', they are thin on guesswork, that human 'gut feeling trait' so much required in 'Far Transfer Solutions'. For this Aoun draws a very interesting parallel on how universities had in the past reformed their institutional arrangements to respond to technological change. Now, it seems that we have reached that point of inflection again.

With the advancing wave of AI-powered super smart machines it has become a necessity that we all become Lifelong Learners, again implying that, if they want to remain significant, universities must grab the opportunity and go where the learners want and need to be. In this case, notwithstanding the validity of experiential learning, the author goes beyond this to envision a quite unorthodox approach. Inclined towards Lifelong Learning as a vessel for the celebration of humans' unique creative traits, universities must therefore not only perennially reboot but get committed to shed their isolated monolithic stances in preference to global multi-university networks, shifting from dictating to enabling institutions. In this case and as part of a perennial quest to adapt to, and constructively enact AI induced requirements, future nomad workers-learners will have no barriers to effortlessly design their own learning experiences. Subsequently they will be able to smoothly and intuitively follow their own respective paths in an authentic and meaningful learning experience, which only a teaching and learning institute firmly embedded in a particular local context can provide.

When it came to reviewing this book, I initially planned to have a tranquil weekend reading about another alternate reality that consistently fails to materialise. My social media posts show otherwise. Once I started delving deeper I became so much intrigued by its thought provoking content that I could not stop reading. I admit that one third into the book, I was still curious if the author would ultimately argue his way out of the very tight corner he had placed himself in. I believe that he did convincingly well. With all the objectively placed arguments, portrayed implications and change that AI can bring upon the topography of HE and education in general, I describe this reading as a journey of self-realisation. Proving to be a tough challenge to many of my beliefs, this book has been characterised by many instances where I had to retrace my steps and again read whole passages to ensure that I was really understanding the portrayed implications. On a final note the book is a must read to all educators who, metaphorically speaking, do not want to go the way of the dodo.

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