

The Age of AI and The Coming Wave - recommended by Tony Brewer

Introductions

The Age of AI & The Coming Wave

Started with 1 book, finished with 2

Both on Artificial Intelligence, but looking at different aspects

John McCarthy 1956 - defined AI as “machines/computers that can perform tasks that are characteristic of human intelligence - e.g. perceiving, reasoning, learning, interacting.”

The Age of AI

Published 2021, 272 pages

Not about AI technology - about the implications of developments in, & applications of, AI

3 authors

- Henry Kissinger - 100yo diplomat, Richard Nixon's Sec'y of State in 1970s
- Eric Schmidt - businessman & CEO of Google from 2001-2011
- Daniel Huttenlocher - academic based at MIT

7 chapters - titles provide a good idea of what the book is about

- Where we are
- How we got here
- From Turing to today & beyond
- Global network platforms
- Security & world order
- AI & human identity
- AI & the future

Takeaway 1

- All grown up during Age of Reason, human with agency replaces god with power at centre of life
- Everything is knowable given enough data & expertise
- During early C20th these assumptions questioned, quantum mechanics cast doubt on Newtonian certainties
- Now AI is revealing new insights not derived by logical methods - an Age of Unreason
- Possible threat to humanist fundamental beliefs

Takeaway 2

- Although the upsides of AI are wonderful, the downsides are very alarming
- Already a race between nations to apply AI for strategic advantage
- Nuclear weapons are big & very complex & very expensive - so difficult for nations & terrorists to acquire & use

- AI weapons will be very small, inexpensive & easy to use - so easy to acquire & use & very difficult to control
- International action to limit their risks is essential

Final comment

- Book does not suggest any solutions
- “The last time human consciousness was changed significantly—the Enlightenment—the transformation occurred because new technology engendered new philosophical insights, which, in turn, were spread by the technology (in the form of the printing press). In our period, new technology has been developed, but remains in need of a guiding philosophy. Can this need be met by humans, assisted by AIs that interpret and understand the world differently from us? Is our destiny one in which humans do not completely understand machines, but make peace with them and, in so doing, change the world?”

The Coming Wave

Picks up from the conclusion of *The Age of AI* & considers the problem of technology containment - particularly of AI & synthetic biology

Published September 2023, 332 pages

2 authors

- Mustafa Suleyman - 1 of the 3 computer scientists who founded Deep Mind in 2011, now owned by Google, developed machine learning AI, AlphaGo, that beat world Go champion, developed AI for solving the protein-folding problem in medical biology
- Michael Baskar - a technical writer

Structure - Prologue, 14 chapters, postscript

Takeaway 1 - the wave

- Developments in technology are building into a wave, a tsunami that will wash over all of society
- Wave has 4 features:
 - Asymmetric impact - small actions create big results
 - Developing very fast - OpenAI's ChatGBT had more than 1 million users within a week
 - Omni-use - e.g. drones, originally toys, are used in making movies & now as very cheap & effective weapons
 - Possess a degree of autonomy - systems that work without human supervision
- Drivers of the wave
 - National competition - China aims to be world leader in AI by 2030
 - Research curiosity
 - Financial gain
 - Personal ego

Takeaway 2 - containment is essential

- Containment: a set of interlinked & mutually reinforcing technical, cultural, legal & political mechanisms for controlling a technology
- Containment problem has never been solved
- Challenge is about to decisively escalate
- Must find a solution

Takeaway 3 - the solution - 10 tentative steps

- Establish mutual agreement that a fixed proportion, say 20 percent, of R&D budgets devoted to safety & ethics
- Research groups collaborating on understanding & explaining what they're doing
- Establish rate-limiting choke points to slow rate of development & ensure good sense prevails
- Build in controls
- Change corporate structures & objectives to incentivise both profit & safety
- Politics: establish a minister for emerging technology in every government, responsible for observing, licensing & controlling commercial organisations.
- Create international control alliances like International Atomic Energy Agency & AI Audit Authority
- Create a culture of embracing failure & learning from mistakes, like aviation industry
- People power - encourage a popular movement of media, trades unions, activists, philanthropic funders, users to agitate for control - enlarge the 'we' of people involved with AI
- Combine all the containment approaches to delay, detect & defend against bad outcomes

Both books well written & easy to read

Differ in style

- The Age of AI is more like a sermon from local vicar, thoughtful & not confrontational
- The Coming Wave more like a rant from popular evangelist

Which to read?

- If you're not repelled by technology then the Coming Wave, it's more practical & action orientated
- If you repelled by technology then The Age of AI is comprehensive & informative

Contemporary comment

U.N.-sponsored annual talks on digital issues opened in the western Japan city of Kyoto on Sunday, with regulation of generative artificial intelligence tools at the top of the agenda.