



## Computer Science Reading List

- Computational Fairy Tales by Jeremy Kubica. ISBN: 978-1477550298 – a great book looking at the principles of computational thinking, illustrating high-level computer science concepts, the motivation behind them, and their application via the medium of a fairy tale. Aimed at secondary school students.
- Artificial Intelligence: A Ladybird Expert Book by Michael Wooldridge. ISBN: 978-0718188757 This book chronicles the development of intelligent machines, from Turing's dream of machines that think, to today's digital assistants like Siri and Alexa."
- Once Upon an Algorithm: How Stories Explain Computing by Martin Erwig. ISBN: 978-0262036634. Concepts in Computer Science explained through familiar stories such as Hansel and Gretel, Sherlock Holmes, the movie Groundhog Day, and Harry Potter.
- Computer Science: An Overview by J. Glenn Brookshear. ISBN: 978-0321544285 - overview of what computer science is all about: each topic is presented with its historical perspective, current state, and future potential, as well as ethical issues.
- Code: The Hidden Language of Computer Hardware and Software by Charles Petzold. ISBN: 978-0735611313 - "What do flashlights, the British invasion, black cats, and seesaws have to do with computers? See how ingenuity and our very human compulsion to communicate have driven the technological innovations of the past two centuries."
- Out of Their Minds by D Shasha and Cathy Lazere. ISBN: 978-3540979920 - the lives and discoveries of fifteen unsung computer scientists whose programs have helped people from factory owners to cartoonists.
- The Pattern on the Stone: The Simple Ideas That Make Computers Work by Daniel Hillis. ISBN: 978-0465025961 - explains the basic concepts of the computer in everyday language.
- The Information: A History, a Theory, a Flood by James Gleick. ISBN: 978-0007225736 - a chronicle that shows how information has become "the modern era's defining quality - the blood, the fuel, the vital principle of our world."
- Outnumbered: From Facebook and Google to fake news and filter-bubbles – the algorithms that control our lives by David Sumpter. ISBN: 978-1472947413. An applied mathematician takes a look at what algorithms are doing with our data and how they are changing our lives
- AI: Its Nature and Future by Margaret A Boden. ISBN: 978-0198777984. Reviews the philosophical and technological challenges raised by Artificial Intelligence, considering whether programs could ever be really intelligent, creative or even conscious, and shows how the pursuit of Artificial Intelligence has helped us to appreciate how human and animal minds are possible.

- The Pleasures of Counting by Tom K rner. ISBN: 978-0521568234 - puts Maths into the context of how it is used to solve real-world problems.
- The Code Book by Simon Singh. ISBN: 978-1857028898 - not strictly about Computer Science, but an interesting introduction to code-breaking and cryptography, fields that have a strong connection to Computer Science.
- Closing the Gap: The Quest to Understand Prime Numbers by Vicky Neale. ISBN: 978-0198788287. Oxford Mathematician Vicky Neale looks at recent progress towards resolving the long-standing Twin Primes Conjecture, including exciting work done as part of huge online collaborations such as the Polymath Projects.
- Algorithmic Puzzles by Anany Levitin and Maria Levitin. ISBN: 978-0199740444 - "The emphasis lies in training the reader to think algorithmically and develop new puzzle-solving skills: the majority of puzzles are problems where we are asked to find the shortest distance or the fewest moves to get from A to B, or construct a proof that a puzzle has no solution".
- The New Turing Omnibus by A Kee Dewdney. ISBN: 978-0805071665 - mini articles on Computer Science topics.