Computer Science Reading List

1. *Little Brother* by Cory Doctorow

- Theme: Hacking, surveillance, government control, and privacy.
- Synopsis: After a terrorist attack in San Francisco, Marcus and his tech-savvy friends rebel against the government's increasing surveillance. This novel blends computer science concepts with themes of civil liberties and social justice.
- Why it fits: It explores encryption, hacking, and cybersecurity in an accessible way.

2. *The Eye of Minds* by James Dashner

- Theme: Virtual reality, artificial intelligence.
- Synopsis: In a futuristic world, most people escape into a virtual-reality world known as the VirtNet. A skilled gamer named Michael is recruited to stop a cyber-terrorist wreaking havoc inside the game.
- Why it fits: Introduces students to the possibilities of AI and VR through a thrilling story.

3. *Ready Player One* by Ernest Cline

- Theme: Virtual reality, AI, gaming culture.
- Synopsis: In a dystopian future, most of humanity spends its time in a virtual reality world called the OASIS. Teenager Wade Watts embarks on a quest within the OASIS to find the fortune of its deceased creator.
- Why it fits: Provides an entertaining introduction to concepts like virtual reality, coding, and future digital cultures.

4. *Neuromancer* by William Gibson

- Theme: Cyberpunk, AI, hacking.
- Synopsis: This classic cyberpunk novel follows a washed-up computer hacker hired for one last job to interface with an artificial intelligence.
- Why it fits: Neuromancer is one of the foundational works in cyberpunk fiction, introducing the idea of "cyberspace" and exploring AI and hacking.

5. *Feed* by M.T. Anderson

- Theme: Social media, brain-computer interfaces, consumerism.
- Synopsis: In a future where the internet is wired directly into people's brains, the story follows Titus, a teenager who begins to question the constant stream of media and advertising fed to him.
- Why it fits: Explores human-computer interaction and the implications of being constantly connected.

6. *The Hitchhiker's Guide to the Galaxy* by Douglas Adams

- Theme: Artificial intelligence, supercomputers.
- Synopsis: Arthur Dent, an ordinary human, gets swept off Earth just before it's destroyed and embarks on an absurd journey through space with a cast of eccentric characters, including Marvin, a depressed robot.
- Why it fits: It's lighthearted but touches on big technological ideas, especially supercomputing and AI, in a humorous way.

7. *Snow Crash* by Neal Stephenson

- Theme: Virtual reality, hacking, cyberpunk.
- Synopsis: In a near-future America where governments have collapsed, Hiro Protagonist is a pizza delivery guy/hacker who uncovers a mind-controlling virus within a virtual reality universe called the Metaverse.
- Why it fits: Like *Neuromancer*, this book is a classic of cyberpunk fiction that deals with virtual reality, hacking, and cryptography.

8. *Cinder* by Marissa Meyer

- Theme: Androids, artificial intelligence, cybernetics.
- Synopsis: A sci-fi retelling of Cinderella, where Cinder is a skilled mechanic and cyborg living in a futuristic world. As a cyborg, she faces prejudice but becomes key to solving global problems involving androids and the plague.
- Why it fits: Introduces the theme of cyborgs, AI, and the ethical implications of human-machine integration.

9. *The Matrix Comics* (Various Authors)

- Theme: Virtual reality, AI, dystopia.
- Synopsis: Based on the themes explored in *The Matrix* movie, the comics delve into the world of virtual reality, human rebellion against machines, and philosophical questions about reality.
- Why it fits: Combines the thrilling aspects of virtual reality and AI with more mature philosophical exploration.

10. *Warcross* by Marie Lu

- Theme: Virtual reality, gaming, AI.
- Synopsis: In the future, a virtual reality game called Warcross has taken the world by storm. Teenage hacker Emika Chen is hired by the game's creator to uncover a conspiracy within the virtual world.
- Why it fits: It introduces students to the intersection of gaming, hacking, and virtual reality, while exploring ethical issues of AI.

11. *Flatland: A Romance of Many Dimensions* by Edwin A. Abbott

- Theme: Geometry, dimensions, math.
- Synopsis: This novella describes a two-dimensional world, whose protagonist is introduced to the concept of a third dimension. It's a mathematical allegory but can inspire interest in computational geometry and dimensions in computer science.
- Why it fits: While more abstract, it helps students think about mathematical and geometric concepts, essential in computer science.

12. *Zen and the Art of Motorcycle Maintenance* by Robert M. Pirsig

- Theme: Philosophy of technology, quality, and maintenance.
- Synopsis: Though not specifically about computer science, this novel explores the relationship between humans and technology, and the concept of "quality" in engineering and life.
- Why it fits: Encourages students to think philosophically about their relationship with technology and coding.
- 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.

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