## THE COMPUTER ALWAYS WINS

Using Classic Games to Teach Advanced Computer Algorithms

### Elliot Joseph Lichtman

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# A lively and engaging guide to coding concepts too long locked behind imposing mathematics and perplexing vocabulary.

Students of every age are excited to learn computer science, yet the field's standard materials are too often a dull, technical slog. Computer science doesn't have to be this way.

Using word games, board games, and strategy games, *The Computer Always Wins* engages and entertains, introducing algorithms and intermediate coding by guiding readers to teach a computer to play each game effectively. Through the pages, TicTacToe helps a reader understand recursion. Wordle teaches optimization. Taboo becomes an intuitive gateway to machine learning.

**Elliot Joseph Lichtman** is college student at Yale, class of '27. Since launching his online coding classes at <u>www.ComeCodeWithUs.com</u> at a remarkable fifteen years old, he has logged 800+ classroom hours, taught more than 350 students, and earned more than \$100,000, all using the techniques, strategies, and games shared in *The Computer Always Wins*. His explainer on data compression is published in <u>Quanta</u>.

### Audience:

- **Readers ages 12+** who already know coding basics and are now ready to learn the sophisticated strategies computers actually use to solve real-world problems.
- Educators and parents who are looking for ways to inspire their charges.
- Coding-curious adults who might not themselves write code but who still want to understand how computers organize information, solve problems, and seemingly think. Not just for the classroom!

### **Comparable Titles:**

- A natural sequel to entry-level coding books such as *Python Crash Course* and *Everything You Need to Ace Computer Science and Coding in One Big Fat Notebook.*
- A fun, accessible alternative to the more technical *Algorithms Illuminated* or *Nine Algorithms that Changed the Future*.
- Popular math trade books such as *Secrets of Mental Math, How Not to Be Wrong: The Power of Mathematical Thinking, The Magic of Math* and *Humble Pi*.

### Advance Praise for THE COMPUTER ALWAYS WINS:

"Marvelously crafted. Just the kind of book every MIT-bound young computer scientist would want to master before college." – Dr. Isaac Chuang, Professor of Electrical Engineering, Computer Science & Physics, Massachusetts Institute of Technology

"A superb collection of coding challenges accompanied by elegant descriptions of the relevant computer science concepts. The joy of algorithms shines through, page after page." – Dr. John MacCormick, Professor of Computer Science, Dickinson College; Author of *Nine Algorithms that Changed the Future* 

"Great introductions to complex topics not only teach the reader new concepts and tools, but open up entirely new ways of thinking. A real treat." – Richard Rusczyk, founder of the Art of Problem Solving & director of the National Security Administration's USA Mathematical Talent Search

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