This book offers a gentle motivation and introduction to computational thinking, in particular to algorithms and how they can be coded to solve significant, topical problems from domains such as finance, cryptography, Web search, and data compression.

The book is suitable for undergraduate students in computer science, engineering, and applied mathematics, university students in other fields, high-school students with an interest in STEM subjects, and professionals who want an insight into algorithmic solutions and the related mindset. While the authors assume only basic mathematical knowledge, they uphold the scientific rigor that is indispensable for transforming general ideas into executable algorithms. A supporting website contains examples and Python code for implementing the algorithms in the book.

