

# Computer Science Self-Study Aids

## Algorithms

- [Algorithms](#) by S. Dasgupta, C. Papadimitriou, U. Vazirani. First Edition, McGraw-Hill, 2008. ISBN-13: **978-0073523408**. [Link to online book](#).
- [Introduction to Algorithms](#) by T. Cormen, C. Leiserson, R. Rivest, C. Stein. Third Edition, The MIT Press, 2009. ISBN-13: **978-0262033848**. [Link to online book](#).
- [The Nature of Computation](#) by Christopher Moore. ISBN-13: **978-0199233212**.
- Online resources:
  - [Graduate course](#)

## Numerical computing

- [Numerical Mathematics and Computing \(5th Edition\)](#), by E. Ward Cheney and David R. Kincaid, Brooks/Cole Publishers (2004), 690 pages. ISBN-13: **978-0534389932**.
- [Numerical Methods for Scientists and Engineers](#) by Richard Hamming. ISBN-13: **978-0486652412**.
- [Numerical Analysis](#) by Timothy Sauer, Pearson Addison-Wesley 2006. ISBN-13: **978-0321268983**.
- Online resources:
  - [Numerical Computing with MATLAB](#) by Cleve Moler
  - [Fundamental Numerical Methods and Data Analysis](#) by George W. Collins, II

## Software engineering

- [Head First Software Development](#) by Tracey Pilone & Russ Miles. ISBN-13: **978-0596527358**.
- Simon Bennett, John Skelton, and Ken Lunn, [Schaum's Outline of UML, 2nd edition](#), McGraw-Hill, 2004. ISBN-13: **978-0077107413**.
- [Code Complete](#) by Steve McConnell. ISBN-13: **978-0735619678**.

## Model development

- [Dynamic Models in Biology](#) by Ellner and Guckenheimer (2006) Princeton. ISBN-13: **978-0691125893**.

## Complex Networks

- [Networks: An Introduction](#) by Mark Newman.
- S. N. Dorogovtsev and J. F. F. Mendes, [Evolution of Networks](#), Oxford University Press, Oxford (2003). ISBN-13: **978-0198515906**.
- Online resources:
  - [Complex Networks course website](#)
  - [Algorithms of Large and Complex Networks](#) by Lerner/Wagner/Zweig. Online link:

## Python

- [Learning Python: Powerful Object-Oriented Programming](#) by Mark Lutz.

## Matlab

- [MATLAB: An Introduction with Applications](#) by Gilat. ISBN-13: **978-0471694205**.
- Online resources:
  - Introduction to MATLAB:  
<http://amath.colorado.edu/computing/Matlab/Tutorial/Intro.html>
  - MATLAB Tutorial: <http://www.mathworks.com/help/techdoc/index.html>