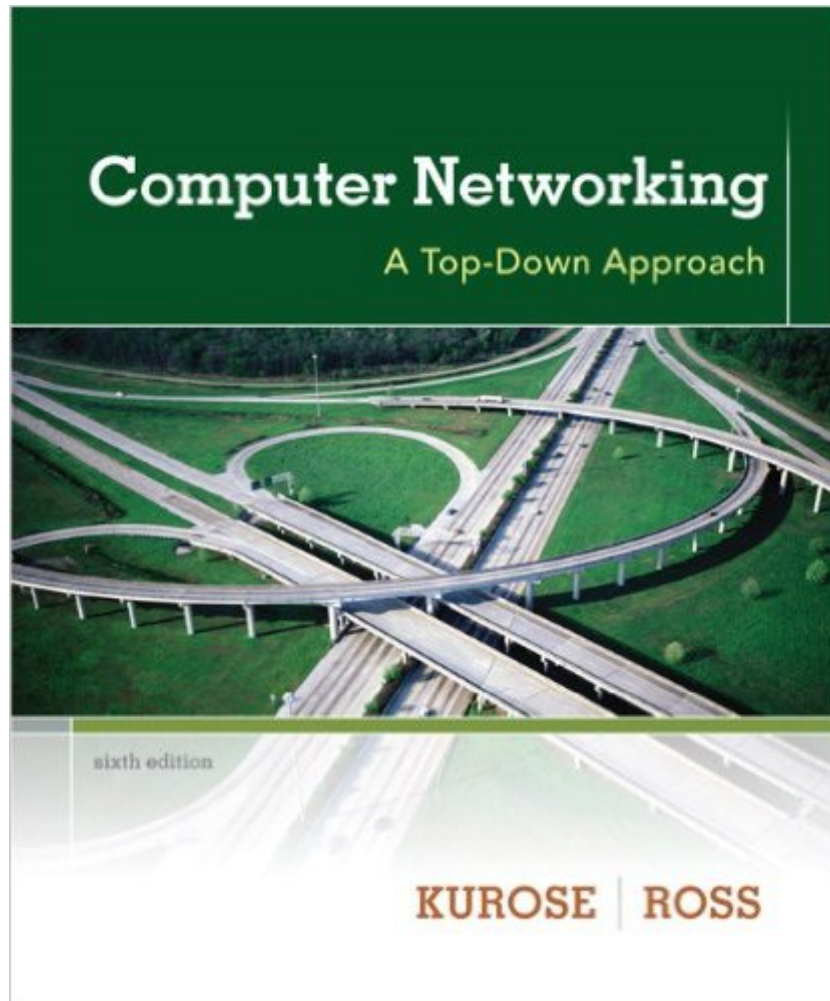# Computer Networking: A Top-Down Approach (6th Edition)

## Synopsis

&>Computer Networking continues with an early emphasis on application-layer paradigms and application programming interfaces (the top layer), encouraging a hands-on experience with protocols and networking concepts, before working down the protocol stack to more abstract layers.

This book has become the dominant book for this course because of the authorsâ ™ reputations, the precision of explanation, the quality of the art program, and the value of their own supplements. Visit the authorsâ ™ blog for information and resources to discuss the newest edition, as well as valuable insights, teaching tips, and discussion about the field of Computer Networking http://kuroseross.com

## Book Information

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## Customer Reviews

I'm a graduate student in Comp Sci, and I recently had the opportunity to take a networking class again just to refresh my basic knowledge (my dissertation topic isn't related to networks). It was a pleasant surprise for me that the class utilised this textbook. I have been at the university level in CS for 8+ years (grad + undergrad), and this book is *by far* the best introductory computer science textbook I have ever read in any CS subject.The book is very well-written and extremely interesting to read. I was never bored in any chapter. Kurose and Ross are knowledgable experts in their field, and their exposition of the material is fantastic. Unlike Tanenbaum's book, they start at the application layer and move down. IMHO, this is a far better pedagogical strategy, because young

students these days already have an excellent layer-5 understanding thanks to daily interaction with HTTP, IM, P2P file sharing, etc. If I remember correctly from my undergrad days, my own experience in a bottom-up approach, starting at the physical layer, really put me to sleep and put me off from networking. That's a shame, because networking is a really exciting field.The best parts of the book are the breadth, thorough use of real-world topics, and the illustrations. In fact, the diagrams and illustrations are just plain great. Most technical writers often rely too much on the written word. Here, the authors augment almost every pair of pages with an illustration; this is simply remarkable. The explanations of fundamental topics (such as packet-switching, DNS, TCP congestion control, IP routing, and ethernet) are *extremely* clear. More advanced topics are very up-to-date, covering cutting-edge subjects such as P2P, CDNs, security, NATs, 802.11, RTP, etc.

This review compares the following four books:Computer Networks by Peterson and Davie (P & D)Computer Networks by TanenbaumComputer Networks by Comer / Internetworking with TCP/IPComputer Networking by Kurose and Ross (K & R)By far the best book in the list is "Computer Networking" by Kurose and Ross. This book covers all of the essential material that is in the other books but manages to do so in a relevant and entertaining way. This book is very up to date as seen by the release of the 5th Ed when the 4th Ed is barely two years old. There are lots of practical exercises using wireshark and the companion website is actually useful and relevant. The attitude of this book with regard to teaching networking concepts could be summed up as "try it out and see for yourself". One interesting thing to note is that the socket programming example are all in Java.Next up is the Peterson and Davie book which covers everything that Kurose and Ross discuss but is slightly more mathematical in how it goes about things. There are a lot more numerical examples and defining of formulas in this book which is fine by me and in no way detracts from the book. Also the socket programming examples are in C which is a little more traditional. The points where this text loses ground to K & R is that it doesn't have the practical application exercises that K & R has and it also doesn't extend the basic networking theory that is covered to modern protocols like K & R.The two Comer books come next. Comer's "Computer Networks" book is probably the most introductory book out of this whole list and is more of a survey of networking topics that doesn't cover anything in any real depth.

After reading all the good reviews, I had a big expectation on this book and was a little disappointed in the end. I have read network books by Peterson&Davie, Tananbaum, and Forouzan so far, and Kurose's book comes somewhere between Tanenbaum's very detailed approach and Forouzan's

plain and simple approach.Pros and cons from my observation.Pros- Spends a lot of pages for application layer.- The very detailed explanation on transport layer and network layer. Probably the best among all the computer network books on this part.- Every protocol comes with RFC# and many references. Good for further study.Cons- Data link layer could have been better presented. Spends the entire chapter for CSMA(Ethernet) and not much mentions about connection oriented protocol. ATM is assigned only 2 pages which gives the readers nothing. Other important protocols(HDLC,Token-ring etc) should have been explained.- Explanation on IP address(classful, CIDR, subnet) isn't deep enough.- No chapter for physical layer. This is a big negative point.Overall, it's a very good book, but I have to say that this book is top-heavy, by which what I mean is the focus is more on upper layers of protocol stack and many things are left out in the lower layers. May be intended to software people, but not for hardware people.I'm not new to computer networking and can't read this book from the beginner's viewpoint, but I'm under the impression this book might be a little difficult to follow for those who have no idea how computer networks work. The reason I'd think that way is because of top-down approach.

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