

<<计算机网络>>

图书基本信息

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### 前言

20世纪末，以计算机和通信技术为代表的信息科学和技术对世界经济、科技、军事、教育和文化等产生了深刻影响。

信息科学技术的迅速普及和应用，带动了世界范围信息产业的蓬勃发展，为许多国家带来了丰厚的回报。

进入21世纪，尤其随着我国加入WTO，信息产业的国际竞争将更加激烈。

我国信息产业虽然在20世纪末取得了迅猛发展，但与发达国家相比，甚至与印度、爱尔兰等国家相比，还有很大差距。

国家信息化的发展速度和信息产业的国际竞争能力，最终都将取决于信息科学技术人才的质量和数量。

引进国外信息科学和技术优秀教材，在有条件的学校推动开展英语授课或双语教学，是教育部为加快培养大批高质量的信息技术人才采取的一项重要举措。

为此，教育部要求由高等教育出版社首先开展信息科学和技术教材的引进试点工作。

同时提出了两点要求，一是要高水平，二是要低价格。

在高等教育出版社和信息科学技术引进教材专家组的努力下，经过比较短的时间，第一批引进的20多种教材已经陆续出版。

这套教材出版后受到了广泛的好评，其中有不少是世界信息科学技术领域著名专家、教授的经典之作和反映信息科学技术最新进展的优秀作品，代表了目前世界信息科学技术教育的一流水平，而且价格也是最优惠的，与国内同类自编教材相当。

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## 内容概要

为此，教育部要求由高等教育出版社首先开展信息科学和技术教材的引进试点工作。

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这项教材引进工作是在教育部高等教育司和高教社的共同组织下，由国内信息科学技术领域的专家、教授广泛参与，在对大量国外教材进行多次遴选的基础上，参考了国内和国外著名大学相关专业的课程设置进行系统引进的。

其中，John Wiley公司出版的贝尔实验室信息科学研究中心副总裁Silberschatz教授的经典著作《操作系统概念》，是我们经过反复谈判，做了很多努力才得以引进的。

William Stallings先生曾编写了在美国深受欢迎的信息科学技术系列教材，其中有多种教材获得过美国教材和学术著作者协会颁发的计算机科学与工程教材奖，这批引进教材中就有他的两本著作。

希望本书通过这些举措，能在较短的时间，为我国培养一大批高质量的信息技术人才，提高我国软件人才的国际竞争力，促进我国信息产业的快速发展，加快推动国家信息化进程，进而带动整个国民经济的跨越式发展。

## 作者简介

作者：（美国）罗斯（Ross K.W.） （美国）库罗斯（Kurose J.F.） Jim Kurose is a professor of Computer Science at the University of Massachusetts, Amherst. Dr. Kurose has received a number of recognitions for his educational activities including Outstanding Teacher Awards from the National Technological University ( eight times ), the University of Massachusetts, and the Northeast Association of Graduate Schools. He received the IEEE Taylor Booth Education Medal and was recognized for his leadership of Massachusetts' Commonwealth Information Technology Initiative. He has been the recipient of a GE Fellowship, an IBM Faculty Development Award, and a Lilly Teaching Fellowship. Dr. Kurose is a former Editor-in-Chief of the IEEE Transactions on Communications and of the IEEE/ACM Transactions on Networking. He has been active in the program committees for IEEE Infocom, ACM SIGCOMM, and ACM SIGMETRICS for a number of years and has served as Technical Program Co-Chair for those conferences. He is a Fellow of the IEEE and the ACM. His research interests include network protocols and architecture, network measurement, sensor networks, multimedia communication, and modeling and performance evaluation. He holds a Ph.D. in Computer Science from Columbia University. Keith Ross is the Leonard J. Shustek Professor in Computer Science at Polytechnic University in Brooklyn. From 1985 to 1998 he was a professor in the Department of Systems Engineering at the University of Pennsylvania. From 1998 to 2003 he was a professor in the Multimedia Communications Department at Institut Eurecom in France. Keith Ross is also the principal founder and original CEO of Wimba, which develops voice-over-IP technologies for e-learning markets. Dr. Ross has published numerous research papers and has written two books. He has served on editorial boards on many major journals, including IEEE/ACM Transactions on Networking, and on numerous programming committees, including ACM SIGCOMM and IEEE Infocom. He has supervised 15 Ph.D. theses. His research and teaching interests include P2P systems, multimedia networking, network protocols, and stochastic networks. He received his Ph.D. from the University of Michigan.

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## 章节摘录

插图：RTP Packet Header Fields As shown in Figure 7.9, the four main RTP packet header fields are the payload type, sequence number, timestamp, and the source identifier fields. The payload-type field in the RTP packet is 7 bits long. For an audio stream, the payload-type field is used to indicate the type of audio encoding ( for example, PCM, adaptive delta modulation, linear predictive encoding ) that is being used. If a sender decides to change the encoding in the middle of a session, the sender can inform the receiver of the change through this payload-type field. The sender may want to change the encoding in order to increase the audio quality or to decrease the RTP stream bit rate. Table 7.1 lists some of the audio payload types currently supported by RTP. For a video stream, the payload type is used to indicate the type of video encoding ( for example, motion JPEG, MPEG I, MPEG 2, H.261 ) . Again, the sender can change video encoding on the fly during a session. Table 7.2 lists some of the video payload types currently supported by RTP. The other important fields are the following.

媒体关注与评论

"This book is a gem——Kurose and Ross take a flesh top-down approach and get the complex networking story right !

It will be invaluable for students and professionals alike." ——Leonard Kleinrock, University of California, Los Angeles  
"I think Kurose/Ross communicates to students well, and also keeps the focus on the essential concepts and principles that truly matter in the long run." ——hivkumar Kalyanaraman, Rensselaer Polytechnic Institute  
"This book is an invaluable resource for networking professionals who need to understand how the Internet actually works. The author's approach to explaining the technology underlying so many of today's communication services is both engaging and easy to understand. This is a must-have book." ——Jennifer Rexford, IP Network Management and Performance, A T& T Labs

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## 编辑推荐

《计算机网络:自顶向下方法与Internet特色(第3版影印版)》:教育部高等教育司推荐国外优秀信息科学与技术系列教学用书。

一流的品质, 优惠的价格。

本套教学用书的特点: 权威性——教育部高等教育司推荐、教育部高等学校信息科学与技术引进教材专家组遴选。

系统性——覆盖计算机专业主干课程和非计算机专业计算机基础课程。

先进性——著名计算机专家近两年的最新著作, 内容体系先进。

经济性——价格与国内自编教材相当, 是国内引进教材价格最低的。

Revised to reflect the rapid changes in the field of networking, Computer Networking provides a top-down approach to this study by beginning with application-level protocols and then working down the protocol stack. An early emphasis is placed on application-layer paradigms and application programming interfaces to allow readers to get their "hands dirty" with protocols and networking concepts in the context of applications they will use in the industry. Networking today is much more ( and far more interesting ) than standards specifying message formats and protocol behaviors. Professors Kurose and Ross focus on describing emerging principles in a lively and engaging manner and then illustrate these principles with examples drawn from Internet architecture. Highlights of the Third Edition Contains a new chapter on wireless and mobile networking, including in-depth coverage of Wi-Fi, Mobile IP, and GSM. Offers a total of twelve labs, including six programming labs and six new Ethereal labs to provide students with hands-on networking experience Has expanded and revised sections on peer-to-peer networking, BGP, wireless security, DNS, and more. Includes access to the Companion Web site with interactive applets, quizzes, and detailed, graphical PowerPoint presentations for every chapter. For more information, please visit [www.PearsonEd.com](http://www.PearsonEd.com).



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