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| Autore | Page Daniel |
| Titolo | What Is Computer Science? : An Information Security Perspective / / by Daniel Page, Nigel Smart |
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| Disciplina | 004.0 |
| Soggetti | Computer science<br>Cryptography<br>Data encryption (Computer science)<br>Algorithms<br>Education - Data processing<br>Computer Science<br>Cryptology<br>Computers and Education |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Part I: Foundations of Computer Science -- Compressing and Correcting Digital Media -- Writing and Comparing Algorithms -- Playing Hide-and-Seek with Virus Scanners -- How Long is a Piece of String? -- Demystifying Web-Search: The Mathematics of PageRank -- Part II: Examples from Information Security -- Using Short Programs to Make and Break Historical Ciphers -- Generation and Testing of Random Numbers -- Safety in Numbers: Modern Cryptography from Ancient Arithmetic -- Hiding a Needle in a Haystack: Concealed Messages -- Picking Digital Pockets. |
| Sommario/riassunto | The remarkable diversity of ideas within the subject of computer science makes it highly rewarding and exciting to study, yet also difficult to describe in essence. This engaging and accessible text addresses the fundamental question: What Is Computer Science? Rather than supplying a brief overview of every relevant topic, the book showcases a set of representative concepts broadly connected by the |

theme of information security. The presentation of each topic can be treated as a "mini" lecture course, demonstrating how it allows us to solve real problems, as well as how it relates to other subjects. The discussions are further supported by numerous examples and practical hands-on exercises, which together will be sure to whet your appetite for the many fascinating aspects of computer science. Topics and features: Presents a concise introduction to the study of algorithms, and describes how computers work using the example of computer viruses Introduces the concepts of data compression, and error detection and correction Highlights the role of data structures, and how their design can have a profound influence on algorithms that operate on them Explores the topic of web-search, with a specific focus on examples drawn from cryptography and information security Reviews both historic and modern cryptographic schemes, examines how a physical system can leak information, and discusses the idea of randomness Investigates the science of steganography, the hiding of secret data within non-secret data Provides additional supplementary material at an associated website This easy-to-read textbook is an ideal introduction to the study of computer science for students beginning on, or contemplating taking, an undergraduate degree. Teachers wishing to offer a primer on the field will also find the book an excellent educational resource.