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Titolo	Binary Code Fingerprinting for Cybersecurity [[electronic resource]] : Application to Malicious Code Fingerprinting // by Saed Alrabaee, Mourad Debbabi, Paria Shirani, Lingyu Wang, Amr Youssef, Ashkan Rahimian, Lina Nouh, Djedjiga Mouheb, He Huang, Aiman Hanna
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Descrizione fisica	1 online resource (XXI, 247 p. 77 illus., 31 illus. in color.)
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Soggetti	Data protection Biometrics (Biology) Computer crimes Security Biometrics Cybercrime
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Nota di contenuto	1 Introduction -- 2 Binary Analysis Overview -- 3 Compiler Provenance Attribution -- 4 Library Function Identification -- 5 Identifying Reused Functions in Binary Code -- 6 Function Fingerprinting -- 7 Free Open-Source Software Fingerprinting -- 8 Clone Detection -- 9 Authorship Attribution -- 10 Conclusion.
Sommario/riassunto	This book addresses automated software fingerprinting in binary code, especially for cybersecurity applications. The reader will gain a thorough understanding of binary code analysis and several software fingerprinting techniques for cybersecurity applications, such as malware detection, vulnerability analysis, and digital forensics. More specifically, it starts with an overview of binary code analysis and its challenges, and then discusses the existing state-of-the-art approaches and their cybersecurity applications. Furthermore, it discusses and details a set of practical techniques for compiler provenance extraction, library function identification, function

fingerprinting, code reuse detection, free open-source software identification, vulnerability search, and authorship attribution. It also illustrates several case studies to demonstrate the efficiency, scalability and accuracy of the above-mentioned proposed techniques and tools. This book also introduces several innovative quantitative and qualitative techniques that synergistically leverage machine learning, program analysis, and software engineering methods to solve binary code fingerprinting problems, which are highly relevant to cybersecurity and digital forensics applications. The above-mentioned techniques are cautiously designed to gain satisfactory levels of efficiency and accuracy. Researchers working in academia, industry and governmental agencies focusing on Cybersecurity will want to purchase this book. Software engineers and advanced-level students studying computer science, computer engineering and software engineering will also want to purchase this book.
