

1. Security Testing: A Survey	1
Michael Felderer, Matthias Büchler, Martin Johns, Achim D. Brucker, Ruth Breu, and Alexander Pretschner	
1. Introduction	2
2. Software Testing	3
3. Security Engineering	6
4. Security Testing	10
5. Security Testing Techniques	16
6. Application of Security Testing Techniques	31
7. Summary	40
Acknowledgments	41
References	41
About the Authors	49
2. Recent Advances in Model-Based Testing	53
Mark Utting, Bruno Legnard, Fabrice Bouquet, Elizabeta Fourneret, Fabien Peureux, and Alexandre Vernotte	
1. Introduction	54
2. MBT Overview	55
3. Current Penetration of MBT in Industry	69
4. Languages for MBT Modeling Activities	75
5. Technologies for Model-Based Automated Test Generation	80
6. Model-Based Security Testing	88
7. Conclusion and Future Challenges	106
References	108
About the Authors	117
3. On Testing Embedded Software	121
Abhijeet Banerjee, Sudipta Chattopadhyay, and Abhik Roychoudhury	
1. Introduction	122
2. Testing Embedded Software	125
3. Categorization of Testing Methodologies	130
4. Black-Box Abstraction	131

5. Grey-Box Abstraction	133
6. White-Box Abstraction	140
7. Future Directions	146
8. Conclusion	148
Acknowledgment	149
References	150
About the Authors	152
4. Advances in Web Application Testing, 2010–2014	155
Sreedevi Sampath and Sara Sprenkle	
1. Introduction	155
2. Web Applications	156
3. Challenges to Web Application Testing	158
4. Web Application Testing, 2010–2014	161
5. Conclusion	181
References	183
About the Authors	190
5. Approaches and Tools for Automated End-to-End Web Testing	193
Maurizio Leotta, Diego Clerissi, Filippo Ricca, and Paolo Tonella	
1. Introduction	194
2. Capture-Replay Web Testing	199
3. Programmable Web Testing	202
4. Test Case Evolution	207
5. Analysis of the Approaches	209
6. Overcoming the Limitations of the Existing Approaches	226
7. Conclusions	233
References	234
About the Authors	236
<i>Author Index</i>	239
<i>Subject Index</i>	251
<i>Contents of Volumes in this Series</i>	259