# Contents

1 **Future Trends of Virtual, Augmented Reality, and Games for Health** ................................................ 1
   Minhua Ma, Lakhmi C. Jain and Paul Anderson
   1.1 Introduction ......................................... 1
   1.2 Chapters Included in the Book ........................... 2
   1.3 Future Trends of VR, AR, and Games for Health ............ 5
      1.3.1 Location-Based Excergaming ................... 5
      1.3.2 Mobile Apps ................................. 5
      1.3.3 Social Media Gaming for Public Health ........... 5
   References ................................................. 6

Part I Applications in Healthcare Education

2 **Healthcare Training Enhancement Through Virtual Reality and Serious Games** ......................................... 9
   Sandrine de Ribaupierre, Bill Kapralos, Faizal Haji, Eleni Stroulia, Adam Dubrowski and Roy Eagleson
   2.1 Introduction: Games and Simulation in Medical Education  .... 10
   2.2 Does Video Game Proficiency Correlate with Surgical Skill? ... 17
   2.3 Serious Games for Patient Education ........................ 17
   2.4 Games and Play: Structured Learning Versus Entertainment .... 18
   2.5 Hierarchical Task Analysis for Game Scenario Design ........ 21
   2.6 Knowledge Level, Procedural Levels, and Basic Skills Level ... 22
   2.7 Conclusions ......................................... 23
   References ................................................. 24

3 **A Haptic-Based Virtual Reality Head and Neck Model for Dental Education** ........................................... 29
   Paul Anderson, Minhua Ma and Matthieu Poyade
   3.1 Introduction ......................................... 30
   3.2 Haptics in Dental Training ............................ 32
   3.3 Development of Head and Neck Anatomy ................... 34
      3.3.1 Data Construction ............................. 36
      3.3.2 Data Acquisition .............................. 37
6 Designing Simulations for Health Managers in Sub-Saharan African Countries: Adherence to eHealth Services

Miia Parnaudeau and Hervé Garcia

6.1 Health Practices and eHealth services’ Adoption in Question

6.1.1 Health Financing Impacts Governance in SSA

6.1.2 More than Resistance to Change Issues

6.2 A Game Scenario Constructed as an Experimental Tool for Research

6.2.1 Pre-simulation Original Objectives

6.2.2 Decision Tree and Game Mechanics

6.2.3 Debriefing

References

7 Using Visualisation for Disruptive Innovation in Healthcare

Daniel Steenstra and John Ahmet Erkoyuncu

7.1 Introduction

7.2 Innovating Healthcare

7.2.1 Healthcare Challenges

7.2.2 Healthcare Reforms

7.2.3 Healthcare System and Stakeholders

7.2.4 Integrated Care and Care Pathways

7.2.5 Innovation Challenges

7.3 Disruptive Innovation and Healthcare

7.3.1 Types of innovation

7.3.2 Disruptive Innovation in Healthcare

7.4 Visualisation of Healthcare Systems

7.4.1 Need for Visualisation

7.4.2 Literature Review

7.4.3 Specification for Visualisation Systems

7.5 Conceptual Visualisation Technologies

7.5.1 GE Vscan Exemplar Disruptive Innovation

7.5.2 Scope and Roadmap

7.5.3 Mapping Alternative Pathways and Business Models

7.5.4 Analysing Costs and Benefits

7.5.5 Decision Support System

7.5.6 Prototype Development

7.5.7 Discussion

7.6 Future Developments

7.6.1 Mapping and Evaluating Pathways

7.6.2 Decision Support System

7.6.3 Developing Disruptive Healthcare Innovation

7.6.4 Healthcare Systems Design

7.7 Conclusion

References
Part II  Nursing Training, Health Literacy, and Healthy Behaviour

8  Virtual Simulations and Serious Games in Community Health Nursing Education: A Review of the Literature 145
   Pamela Stuckless, Michelle Hogan and Bill Kapralos
   8.1 Introduction 146
   8.1.1 Review Method 148
   8.2 Perceptions of Games in Learning 149
   8.3 Designing and Integrating Virtual Simulations into the Nursing Curriculum 150
   8.4 Assessment of Student Learning 151
   8.5 Evaluation of Learning Outcomes 153
   8.6 Discussion 154
   8.6.1 Limitations and Future Work 155
   8.7 Conclusions 156
   References 156

9  Facilitating Learning Through Virtual Reality Simulation: Welcome to Nightingale Isle 159
   Jone M. Tiffany and Barbara A. Hoglund
   9.1 Introduction/Overview 159
   9.1.1 The Virtual World of Second Life™ 160
   9.2 Nightingale Isle 161
   9.2.1 Nightingale Hospital 162
   9.2.2 South Street Clinic 165
   9.3 Theoretical Framework Supporting VRS: Constructivism 167
   9.3.1 Scaffolding 168
   9.4 The Virtual Reality Simulation Educational Model: Using a Constructivist Framework to Enhance Clinical Reasoning 168
   9.5 Using the Virtual Reality Simulation Educational Model: Public Health VRS 170
   9.5.1 Implementation of the VRS 171
   9.5.2 Goal of the Public Health VRS 172
   9.6 Conclusion 172
   References 173

10  Improving Health Information Literacy with Games in the Virtual World of Second Life 175
    Elisabeth Jacobsen Marrapodi
    10.1 Introduction 175
    10.2 Background 176
    10.3 Setting 177
    10.4 Design 178
    10.5 Data 181
    10.6 Challenges and Lessons 182
10.7 Promotion ........................................... 183
10.8 Results ............................................. 184
10.9 Conclusions ......................................... 186
10.10 Update ............................................. 186
References ................................................. 187

11 Urban Exergames: How Architects and Serious Gaming Researchers Collaborate on the Design of Digital Games that Make You Move ....................................... 191
Martin Knöll, Tim Dutz, Sandro Hardy and Stefan Göbel
11.1 Motivation .......................................... 191
11.2 The Road Behind: Influences on Urban Exergames ........... 193
11.2.1 Mobile Exergames ............................ 193
11.2.2 Location-Based Games ....................... 195
11.2.3 Active Design ................................ 196
11.2.4 Other Influential Factors ..................... 198
11.3 The Road Ahead: Creating Urban Exergames ............... 199
11.3.1 What Makes an Urban Exergame ................. 200
11.4 Towards Urban Exergaming .......................... 202
11.5 Discussion and Outlook ................................ 205
References ................................................. 206

12 Leveraging Play to Promote Health Behavior Change: A Player Acceptance Study of a Health Game .................. 209
Shree Durga, Magy Seif El-Nasr, Mariya Shiyko, Carmen Sceppa,
Pamela Naab and Lisa Andres
12.1 Games and Health: Opportunities and Challenges .......... 210
12.1.1 Gamification and Long-Term Health Outcomes ...... 210
12.1.2 Research Questions and Objectives .................. 211
12.2 Previous Research in Games and Health-Behavior Change .. 212
12.2.1 Exercise Through Exergaming .................... 212
12.2.2 Games to Increase Awareness About Nutrition ...... 212
12.2.3 Gamification and Persuasive Games ............... 213
12.2.4 Games and Health-Related Social Behavior .......... 213
12.3 Study Design ........................................ 214
12.3.1 SpaPlay: The Game and Core Design Principles .... 214
12.3.2 The Virtual Island ................................ 215
12.3.3 Sparks ...................................... 215
12.3.4 Quests ...................................... 216
12.3.5 Player Profile Visualization and Real-Time
   Feedback from Activity Sensors .................. 217
12.3.6 Social Play .................................. 218
12.3.7 Participant Recruitment and Interviewing
   Methods ........................................... 218
12.3.8 Game telemetry and Individualized In-Person Interviews .................................. 219
12.3.9 Telemetry-Based Individualized Interviews ............................................. 219
12.4 Findings ........................................................................................................ 220
12.4.1 Patterns Observed within Quests Completed by Participants ....................... 221
12.4.2 Patterns Observed within Sparks Completed by Participants ....................... 222
12.4.3 Distribution of Player Game Activity ..................................................... 223
12.4.4 Emergent Themes from Interviews and How they Explain Patterns from Game Telemetry ........................................................................................................... 223
12.5 Discussion ........................................................................................................ 226
12.6 Conclusions and Implications for Future Work ............................................... 228
References .......................................................................................................... 229

Part III Applications in Neuropsychology

13 Virtual Reality for Neuropsychological Assessment ....................................... 233
Unai Diaz-Orueta, Beñat Lizarazu, Gema Climent and Flavio Banterla
13.1 Introduction ....................................................................................................... 234
13.2 Neuropsychological Tests Using Virtual Reality ............................................. 237
13.2.1 Attention .................................................................................................... 237
13.2.2 Spatial Attention: Hemineglect .................................................................. 240
13.2.3 Learning and Memory .............................................................................. 242
13.3 Prospective Memory Evaluation ...................................................................... 243
13.4 Spatial Orientation and Spatial Memory Evaluation ......................................... 244
13.5 Episodic Memory Evaluation .......................................................................... 246
13.5.1 Executive Functions .................................................................................. 247
13.6 Conclusions ..................................................................................................... 250
References .......................................................................................................... 252

14 The Role of Virtual Reality in Neuropsychology: The Virtual Multiple Errands Test for the Assessment of Executive Functions in Parkinson’s Disease ........................................... 257
Silvia Serino, Elsa Pedroli, Pietro Cipresso, Federica Pallavicini, Giovanni Albani, Alessandro Mauro and Giuseppe Riva
14.1 Introduction ...................................................................................................... 258
14.2 The Role of Virtual Reality in Neuropsychology: Opportunities and Challenges ................................................................................................................................. 259
14.2.1 A New Platform for Neuropsychological Assessment and Rehabilitation: NeuroVR .............................................................................................................. 260
14.3 From Multiple Errands Test to Virtual Multiple Errands Test ......................... 262
14.3.1 The Virtual Multiple Errands Test ................................................................ 264
14.3.2 The Potentiality of the VMET for Neuropsychology .................................. 266
14.4 The Potentiality of the VR in the Assessment of Executive Functions in Parkinson’s Disease: A Possible Approach .............................. 267
  14.4.1 The Virtual Multiple Errands Test for the Assessment of Executive Functions in Parkinson’s Disease ........................................ 268
14.5 Conclusion .............................................................................. 269
References ................................................................................. 271

15 NeuroVirtual 3D: A Multiplatform 3D Simulation System for Application in Psychology and Neuro-Rehabilitation ......................... 275
Cipresso Pietro, Serino Silvia, Pallavicini Federica, Gaggioli Andrea and Riva Giuseppe
15.1 Introduction ............................................................................ 275
15.2 NeuroVirtual 3D Platform: Main Issues and Aims ..................... 276
15.3 The Scientific-Technological State of the Art ................................ 277
15.4 Interfaces Development for Input/Output Hardware Devices for Applications in Neurorehabilitation (e.g. Dataglove, Haptic Devices, Kinect) ......................................................... 278
  15.4.1 Integration with Eye-Tracking Devices ............................... 280
  15.4.2 Development of Multi-User Interaction and Communication Through Avatars ...................................................... 280
  15.4.3 Development of the Ability to Display 3D Content on Mobile Devices ............................................................. 281
  15.4.4 Development of an Online Repository of 3D Scenes for the Sharing of the Environments Among the Software Users .............. 281
15.5 The Clinical Use of Virtual Reality .......................................... 281
References .................................................................................. 283

Part IV Applications in Motor Rehabilitation

16 Rehabilitation at Home: A Comprehensive Technological Approach ................................................................. 289
N. Alberto Borghese, David Murray, Anisoara Paraschiv-Ionescu, Eling D. de Bruin, Maria Bulgheroni, Alexander Steblin, Andreas Luft and Carlos Parra
16.1 Introduction ............................................................................ 290
16.2 Methodology .......................................................................... 292
  16.2.1 Rehabilitation Needs .......................................................... 292
  16.2.2 Exergame Design ............................................................... 294
  16.2.3 IGER Structure ................................................................. 299
  16.2.4 Patient Tracking ............................................................... 301
  16.2.5 Assessment of the Exercises and Support to Patients Through a Virtual Community ...................................................... 303
### 16.2.6 Assessment of Rehabilitation Effectiveness Through Everyday Life Activities .......................... 305
16.2.7 Impact on the Health Provider Side ................................. 306

### 16.3 Results and Discussion ........................................ 309
16.3.1 Rehabilitation Needs and Specifications ................. 309
16.3.2 Implementation of REWIRE Components ............. 312

### 16.4 Conclusion ........................................... 316
References .................................................................. 316

### 17 The Use of the Nintendo Wii in Motor Rehabilitation for Virtual Reality Interventions: A Literature Review .......................... 321
Emmanuel Tsekleves, Alyson Warland, Cherry Kilbride, Ioannis Paraskevopoulos and Dionysios Skordoulis

#### 17.1 Introduction ........................................... 322

#### 17.2 Technical Characteristics of the Nintendo Wii ............... 323
17.2.1 The Nintendo Wii Remote (Wiimote) ........................... 323
17.2.2 The Nintendo Balance Board .................................. 324

#### 17.3 Review of Literature .................................... 325
17.3.1 Search Methodology ........................................ 325

#### 17.4 Summary Findings .................................... 327

#### 17.5 Advantages and Limitations of the Nintendo Wii in Rehabilitation ........................................ 329
17.5.1 Technical Advantages and Limitations .................... 330
17.5.2 Clinical Advantages and Limitations ................. 334
17.5.3 Potential of Using the Nintendo Wii in Rehabilitation .... 335

#### 17.6 Conclusion ........................................... 339
References .................................................................. 340

### 18 A State of the Art Survey in the Use of Video Games for Upper Limb Stroke Rehabilitation .......................... 345
Owen O’Neil, Christos Gatzidis and Ian Swain

#### 18.1 Introduction ........................................... 345

#### 18.2 Upper Limb Impairment and Therapy in Stroke ............... 347

#### 18.3 Video Game Design in Upper Limb Stroke Research ........... 348

#### 18.4 Robotics and Video Games in Upper Limb Stroke Research .... 350

#### 18.5 Virtual Reality and Custom Upper Limb Video Games ........ 354
18.5.1 Commercial Off-the-Shelf Video Games for Upper Limb Stroke Rehabilitation ........................................ 358
18.5.2 Commercial Off-the-Shelf Video Game Systems as Rehabilitation Tools ........................................ 361

#### 18.6 Conclusions and Future Work .................................. 363
References .................................................................. 364
19  The Use of Qualitative Design Methods in the Design, Development and Evaluation of Virtual Technologies for Healthcare: Stroke Case Study ........................................ 371
David Loudon, Anne Taylor and Alastair S. Macdonald
19.1 Introduction: The Role of Design Methods in Delivering Patient-Centred Innovation ........................................ 371
19.2 The Healthcare Context: The Potential Value of Biomechanical Analysis for Stroke Rehabilitation ........ 372
   19.2.1 The Current Use of Biomechanics in Healthcare .... 373
   19.2.2 Widening the Use of Biomechanics: The Potential Use of Visualisation Software in Stroke Rehabilitation ................ 374
19.3 Evolution of Visualisation of Biomechanical Data Through Design Methods: Phases 1 and 2 .............. 376
   19.3.1 Phase 1: The Prototype Visualisation Tool .......... 376
   19.3.2 Phase 2: Evaluating the Potential of the Visualisation Method with People ................ 379
19.4 Investigation of Visualisation Software in Stroke Rehabilitation Using Qualitative Design Methods: Phase 3 .... 382
   19.4.1 Intention .................................... 382
   19.4.2 Process ..................................... 382
   19.4.3 Approach to the Visualisations .................... 383
   19.4.4 Qualitative Feedback Process .................... 383
   19.4.5 The Methodological Framework ................. 385
19.5 Discussion .......................................... 387
19.6 Conclusions ......................................... 389
References ................................................. 389

20  Toward an Automatic System for Training Balance Control Over Different Types of Soil ........................................ 391
Bob-Antoine J. Menelas and Martin J. D. Otis
20.1 Introduction ........................................ 391
20.2 Related Work ....................................... 392
20.3 Proposed Game .................................... 394
   20.3.1 Apparatus ................................... 394
   20.3.2 Metaphors Used for the Displacement in the Game. . 395
   20.3.3 Balance Control: Assessment and Training ........ 399
   20.3.4 Different Levels of Difficulty .................... 400
   20.3.5 Score ....................................... 401
   20.3.6 Safety Issue .................................. 401
20.4 Initial Experiment ..................................... 402
   20.4.1 Participants and Apparatus ...................... 402
   20.4.2 Results ..................................... 403
20.5 Conclusion and Future Work ............................ 406
References ................................................. 406
Part V Therapeutic Games Aimed at Various Diseases

21 Computer Games Physiotherapy for Children with Cystic Fibrosis
Andreas Oikonomou, Dan Hartescu, David Day and Minhua Ma

21.1 Introduction ........................................ 412
21.2 Previous Work ....................................... 413
  21.2.1 Airway Clearance Therapies .................... 413
  21.2.2 Breathing Therapies for Children with Cystic Fibrosis ................ 413
  21.2.3 Adding Play Elements to Therapy ............. 414
  21.2.4 Switching to Digital Games .................... 416
  21.2.5 Existing Games for Cystic Fibrosis .......... 417
  21.2.6 Building on Our Previous Work ............... 419
21.3 Materials and Methods ................................ 420
  21.3.1 Gaming Hardware ............................. 420
  21.3.2 Collecting Game Data ........................ 423
  21.3.3 Collecting Player Feedback ................... 425
21.4 Game Development ................................... 426
  21.4.1 The Target Audience ......................... 427
  21.4.2 Artistic Style ................................. 427
  21.4.3 Game Metaphors ............................... 428
  21.4.4 Pressure Mechanics .......................... 429
  21.4.5 The Cystic Fibrosis Games .................. 430
21.5 Results ............................................. 436
  21.5.1 Control Data ................................. 437
  21.5.2 Game Statistics ............................... 437
21.6 Data Analysis and Conclusions .......................... 441
21.7 Limitations and Future Work ............................ 442
References ................................................. 442

22 Immersive Augmented Reality for Parkinson Disease Rehabilitation
A. Garcia, N. Andre, D. Bell Boucher, A. Roberts-South, M. Jog and M. Katchabaw

22.1 Introduction ........................................ 446
  22.1.1 Augmented Reality in This Context .......... 447
  22.1.2 Goals of this Work ............................ 450
  22.1.3 Chapter Outline ............................... 451
22.2 Related Work ........................................ 451
  22.2.1 Registration and Tracking .................... 451
  22.2.2 Natural Selection and Manipulation ............ 452
  22.2.3 Navigation ................................... 453
22.2.4 Virtual Environments in Parkinson Disease Research .................................. 454
22.2.5 Discussion .................................................................................................... 455
22.3 System Design and Development ................................................................. 455
  22.3.1 Hardware .................................................................................................. 456
  22.3.2 The Physical Space ..................................................................................... 456
  22.3.3 Software ................................................................................................... 457
22.4 Experiment Protocol ......................................................................................... 460
  22.4.1 Watering the Plants Scenario ..................................................................... 461
  22.4.2 Supermarket Scenario ............................................................................... 461
  22.4.3 Street Walk Scenario .................................................................................. 462
22.5 Experiment Results .......................................................................................... 463
  22.5.1 Results of the Supermarket Scenario Experiments ...................................... 464
  22.5.2 Results of the Street Walk Scenario Experiments ....................................... 465
  22.5.3 Presence Questionnaire Evaluation ......................................................... 465
  22.5.4 Discussion .................................................................................................. 466
22.6 Conclusions .................................................................................................... 467
References ............................................................................................................. 468

23 Touchless Motion-Based Interaction for Therapy of Autistic Children .................. 471
Franca Garzotto, Matteo Valoriani and Laura Bartoli
23.1 Introduction ..................................................................................................... 472
23.2 Related Work .................................................................................................. 473
23.3 Empirical Study ............................................................................................... 477
  23.3.1 Research Variables ..................................................................................... 477
  23.3.2 Instruments ............................................................................................... 478
  23.3.3 Participants, Setting and Procedure ......................................................... 483
23.4 Results ............................................................................................................ 485
  23.4.1 Attention Skills .......................................................................................... 485
  23.4.2 Behavioral Aspects ..................................................................................... 486
23.5 Conclusions .................................................................................................... 491
References ............................................................................................................. 492

Part VI Virtual Healing and Restoration

24 Virtual Natural Environments for Restoration and Rehabilitation in Healthcare ........................................... 497
Robert Stone, Charlotte Small, James Knight, Cheng Qian and Vishant Shingari
24.1 Introduction ..................................................................................................... 498
  24.1.1 Distraction Therapy .................................................................................... 498
  24.1.2 VR and Imaginal Exposure ....................................................................... 499
  24.1.3 VR and Combat-Related PTSD ............................................................... 501
  24.1.4 Human Factors Issues of VR for Exposure Therapy ................................. 502
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.2</td>
<td>Restorative Environments</td>
<td>503</td>
</tr>
<tr>
<td>24.3</td>
<td>“Surrogate” Natural Environments</td>
<td>505</td>
</tr>
<tr>
<td>24.3.1</td>
<td>Image- and Video-based Restorative Environments</td>
<td>506</td>
</tr>
<tr>
<td>24.3.2</td>
<td>Virtual Reality-Based Restorative Environments</td>
<td>508</td>
</tr>
<tr>
<td>24.4</td>
<td>The Virtual Restorative Environment Therapy Project</td>
<td>509</td>
</tr>
<tr>
<td>24.4.1</td>
<td>Early VRE Pilot Studies</td>
<td>511</td>
</tr>
<tr>
<td>24.5</td>
<td>Conclusions</td>
<td>516</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>518</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Virtual Reality Graded Exposure Therapy as Treatment for Pain-Related Fear and Disability in Chronic Pain</td>
<td>523</td>
</tr>
<tr>
<td>25.1</td>
<td>Background and Introduction</td>
<td>523</td>
</tr>
<tr>
<td>25.2</td>
<td>The Role of Pain-Related Fear in Disability</td>
<td>524</td>
</tr>
<tr>
<td>25.3</td>
<td>Treating Pain-Related Fear and Avoidance Behavior: Graded Exposure In Vivo</td>
<td>525</td>
</tr>
<tr>
<td>25.4</td>
<td>Virtual Reality as an Instrument of Treatment</td>
<td>527</td>
</tr>
<tr>
<td>25.4.1</td>
<td>Virtual Reality Exposure Therapy for Specific Phobias</td>
<td>528</td>
</tr>
<tr>
<td>25.4.2</td>
<td>Virtual Reality for Pain Distraction</td>
<td>529</td>
</tr>
<tr>
<td>25.5</td>
<td>Treating Pain-Related Fear and Avoidance Behavior in Chronic Pain: Virtual Reality Graded Exposure Therapy</td>
<td>531</td>
</tr>
<tr>
<td>25.5.1</td>
<td>Engagement and Reinforcement</td>
<td>533</td>
</tr>
<tr>
<td>25.5.2</td>
<td>Assessment of Emotional Responses to Exposure</td>
<td>534</td>
</tr>
<tr>
<td>25.5.3</td>
<td>Kinematic Tracking of Movement Performance</td>
<td>536</td>
</tr>
<tr>
<td>25.5.4</td>
<td>Generalizing Treatment Gains</td>
<td>538</td>
</tr>
<tr>
<td>25.6</td>
<td>Conclusions</td>
<td>538</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>539</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>The Importance and Creation of High-Quality Sounds in Healthcare Applications</td>
<td>547</td>
</tr>
<tr>
<td>26.1</td>
<td>Introduction</td>
<td>547</td>
</tr>
<tr>
<td>26.2</td>
<td>The Use of Audio and Video in Healthcare Applications</td>
<td>548</td>
</tr>
<tr>
<td>26.2.1</td>
<td>Effects of Poor Audio in Healthcare Applications</td>
<td>549</td>
</tr>
<tr>
<td>26.3</td>
<td>How to Produce High Quality Audio Recordings</td>
<td>550</td>
</tr>
<tr>
<td>26.3.1</td>
<td>Pre-production</td>
<td>551</td>
</tr>
<tr>
<td>26.3.2</td>
<td>Production</td>
<td>556</td>
</tr>
<tr>
<td>26.3.3</td>
<td>Post-production</td>
<td>559</td>
</tr>
<tr>
<td>26.4</td>
<td>Summary</td>
<td>564</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>564</td>
</tr>
</tbody>
</table>

About the Editors | 567 |
Virtual, Augmented Reality and Serious Games for Healthcare 1
Ma, M.; Jain, L.C.; Anderson, P. (Eds.)
2014, XVIII, 568 p. 207 illus., 40 illus. in color., Hardcover
ISBN: 978-3-642-54815-4