

1. Record Nr.	UNISA996485665803316
Titolo	Extended reality . Part II : first International Conference, XR Salento 2022, Lecce, Italy, July 6-8, 2022, proceedings // Lucio Tommaso De Paolis, Pasquale Arpaia and Marco Sacco (editors)
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-15553-X
Descrizione fisica	1 online resource (469 pages)
Collana	Lecture notes in computer science ; ; Volume 13446
Disciplina	006.8
Soggetti	Virtual reality Mixed reality
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Keynote Abstracts -- Extend Human Performances with Augmented Reality -- Past and Coming 20 Years with Augmented Reality -- Remote and Close Range Sensing, Imaging and eXtended Reality for the Interpretation and Conservation of Cultural Heritage -- Contents - Part II -- Contents - Part I -- eXtended Reality for Learning and Training -- Mixed Reality Agents for Automated Mentoring Processes -- 1 Introduction -- 2 Related Work -- 3 Realization -- 3.1 Virtual Agents Framework -- 3.2 Architecture of the Mixed Reality Mentoring Agent -- 3.3 Extensions for Mentoring: Behavior Trees -- 3.4 Mentoring Prototype Application -- 4 Evaluation -- 4.1 Preparations and Setup -- 4.2 Results -- 5 Discussion -- 6 Conclusion and Future Work -- References -- Asynchronous Manual Work in Mixed Reality Remote Collaboration -- 1 Introduction -- 2 Related Work -- 2.1 Asynchronous Collaboration in MR -- 2.2 Spatial Capture and Replay of Body Motions -- 2.3 Representation of Non-present Collaborators -- 2.4 Contribution -- 3 Asynchronous Capture and Replay of Spatial Work -- 3.1 Representation of Collaborators and Their Manual Work -- 3.2 Record and Replay Process -- 4 Application in Remote Assembly Training -- 5 Pilot Experiment -- 5.1 Experimental Design -- 5.2 Results -- 5.3 Limitations -- 6 Conclusion -- References -- A Virtual Reality Serious Game for Children with Dyslexia: DixGame

-- 1 Introduction -- 2 Related Work -- 3 Game Design: DixGame -- 3.1 Software -- 3.2 Hardware -- 3.3 Whack-a-Mole -- 3.4 Memory -- 4 Conclusions and Future Work -- References -- Processing Physiological Sensor Data in Near Real-Time as Social Signals for Their Use on Social Virtual Reality Platforms -- 1 Introduction -- 2 Related Work -- 2.1 Processing Physiological Sensor Data -- 2.2 Development of Database Technologies. 2.3 Transferring Physiological Sensor Data from Sensors into Streaming Software -- 2.4 Near Real-Time Processing -- 2.5 Research Gap and Contribution -- 3 Concept -- 4 Implementation -- 5 Discussion -- 6 Conclusion -- 7 Future Work -- References -- Developing a Tutorial for Improving Usability and User Skills in an Immersive Virtual Reality Experience -- 1 Introduction -- 2 Related Work -- 3 Designing an Effective and Engaging Tutorial -- 4 Usability Evaluation -- 4.1 Preparation and Procedure -- 4.2 Results -- 5 Conclusions -- References -- Challenges in Virtual Reality Training for CBRN Events -- 1 Introduction -- 2 Related Work -- 2.1 Virtual Training Environments -- 2.2 CBRN Training -- 3 Challenges for Virtual Reality CBRN Training -- 3.1 Exercise Simulation Platform -- 3.2 Scenarios and Scenario Creator -- 3.3 CBRN VR Mask -- 4 Conclusion -- References -- A Preliminary Study on the Teaching Mode of Interactive VR Painting Ability Cultivation -- 1 VR Painting and VR Painting Teaching -- 1.1 The Prospect of VR Painting -- 1.2 Research Context of VR Painting Teaching -- 2 VR Painting Software -- 2.1 The Introduction of VR Painting Software -- 2.2 Advantages of VR Painting -- 3 The Main Points of the Construction of a VR Painting Talent Training Model -- 3.1 Building a Teaching System for VR Painting Tools -- 3.2 Application of Traditional Art Skills in VR Painting -- 3.3 Develop Spatial Layout and Narrative Skills -- 3.4 Collaborative Creation with 3D Modeling Software -- 3.5 Thinking Expansion and Material Accumulation -- 4 The Cultivation of Aesthetic Appreciation Ability Under the New Mode -- 5 Challenges of VR Painting -- 6 Conclusion -- References -- eXtended Reality in Education -- Factors in the Cognitive-Emotional Impact of Educational Environmental Narrative Videogames -- 1 Introduction -- 2 Research Questions and Procedure. 3 Experiment Methodology -- 4 Results and Conclusions -- References -- Instinct-Based Decision-Making in Interactive Narratives -- 1 Introduction -- 2 Conceptualization -- 2.1 Immersion, Interactivity, and Agency -- 2.2 Guidance -- 3 Methodology -- 4 Design and Production -- 4.1 Scriptwriting -- 4.2 Design -- 5 Results -- 6 Conclusions -- 7 Future Work -- References -- The Application of Immersive Virtual Reality for Children's Road Education: Validation of a Pedestrian Crossing Scenario -- 1 Introduction -- 1.1 Background -- 1.2 Aims of the Study -- 2 Procedure -- 2.1 Ethical Approval -- 2.2 Simulator -- 2.3 Participants -- 2.4 Scenario -- 2.5 Variables -- 3 Analysis and Results -- 3.1 Comparison of Behavior in Reality and in the Virtual Environment -- 3.2 Reaction Time -- 3.3 Average Crossing Speed -- 4 Conclusions and Future Developments -- References -- Collaborative VR Scene Broadcasting for Geometry Education -- 1 Introduction -- 2 Related Work -- 2.1 Development of VR in Geometry Education -- 2.2 Possible Solutions to Facilitate VR Collaboration -- 3 Design -- 3.1 Infrastructure of VRSB -- 3.2 Independent Expanding Space and Shared Space -- 3.3 Publish Side and Subscribe Sides -- 4 Implementation -- 4.1 A Case Study of the Lira Leaning Tower -- 4.2 A Case Study of the Building Bridges -- 5 User Feedback -- 6 Discussion and Conclusion -- References -- Collaborative Mixed Reality Annotations System for Science and History Education Based on UWB Positioning and Low-Cost AR Glasses -- 1

Introduction -- 2 Relative Work -- 2.1 The Superiority of Applying MR in Education -- 2.2 Status Quo of AR Glasses -- 2.3 Equivalent Systems -- 3 System Design -- 3.1 Introduction of Three Modules -- 3.2 Principle of Space Positioning -- 3.3 Measurement and Positioning of Physical Space -- 3.4 Acquisition, Calculation, and Propagation of Positioning Coordinates. 3.5 Alignment of Virtual Space with Real Space -- 4 User Study -- 5 Conclusions and Discussion -- References -- Artificial Intelligence and Machine Learning for eXtended Reality -- Can AI Replace Conventional Markerless Tracking? A Comparative Performance Study for Mobile Augmented Reality Based on Artificial Intelligence -- 1 Introduction -- 2 Related Works -- 3 Materials and Methods -- 3.1 Classification Task -- 3.2 Object Detection Task -- 4 Experimental Processing -- 4.1 Motivation for the Choice of Devices -- 4.2 Test Configuration and Description -- 4.3 Test Application Execution -- 4.4 Graph Analysis -- 5 Conclusions and Future Works -- References -- Find, Fuse, Fight: Genetic Algorithms to Provide Engaging Content for Multiplayer Augmented Reality Games -- 1 Introduction -- 2 Related Works -- 2.1 AR Video Games -- 2.2 GAs for PCG in Games -- 3 FFF: Find, Fuse, Fight -- 3.1 Overview of FFF -- 3.2 Fuse: Generation of New Creatures -- 3.3 Fight: The AR Fighting System -- 4 Performance Test -- 5 Conclusion and Future Works -- References -- Synthetic Data Generation for Surface Defect Detection -- 1 Introduction -- 2 Background in Defect Detection Using Synthetic Data -- 3 Scientific Issues -- 4 Our Synthetic Data Generator and Training -- 5 Results -- 6 Conclusion and Future Work -- References -- eXtended Reality in Geo-information Sciences -- ARtefact: A Conceptual Framework for the Integrated Information Management of Archaeological Excavations -- 1 Introduction -- 2 Principles and Objectives -- 3 Scientific and Technological State-of-the-Art -- 3.1 Technologies and Applications for the Digital Documentation of Excavations, Documentation Study and Conservation -- 3.2 Semantic Linking of Archaeological Data with the Use of Ontologies -- 3.3 Applications for the Interactive Presentation of Cultural Heritage and Excavation Findings. 3.4 Digital Archaeology Projects -- 4 The ARtefact Architecture -- 5 End Products and Usage Scenarios -- 6 Scientific and Technological Innovation -- 7 Conclusions -- References -- Geomatics Meets XR: A Brief Overview of the Synergy Between Geospatial Data and Augmented Visualization -- 1 Introduction -- 2 Related Works -- 2.1 Microsoft HoloLens -- 3 Description of GEOLENS Solution -- 3.1 Device and Web Platform -- 3.2 Georeferencing the Project -- 3.3 Examples of Possible Applications Domains -- 4 Conclusions and Future Works -- References -- Utilization of Geographic Data for the Creation of Occlusion Models in the Context of Mixed Reality Applications -- 1 Introduction -- 2 Problem Statement -- 3 State of the Art -- 4 Material -- 5 Methodology -- 5.1 Elevation Data -- 5.2 Geographic Information Services -- 6 Implementation -- 7 Results -- 8 Conclusion -- 9 Outlook -- References -- Development of an Open-Source 3D WebGIS Framework to Promote Cultural Heritage Dissemination -- 1 Introduction -- 2 Material and Methods -- 2.1 WebGIS Application Design and Implementation -- 2.2 Data Collection and Geodatabase Building -- 2.3 3D Model Produced by RPAS-Photogrammetry -- 3 Results -- 4 Discussion and Conclusion -- References -- Industrial eXtended Reality -- A Framework for Developing XR Applications Including Multiple Sensorial Media -- 1 Introduction -- 2 Main Issues Concerning the Sense of Smell -- 3 Framework for Smell Augmented XR Applications -- 3.1 Designing XR Interaction Including Smell Effects --

3.2 Rendering Smell Effects -- 4 Case Studies -- 4.1 Olfaction-Augmentation for Training -- 4.2 Olfaction-Augmentation for Learning -- 4.3 Olfaction-Augmentation in Museums -- 5 Conclusions -- References -- Augmented Reality Remote Maintenance in Industry: A Systematic Literature Review -- 1 Introduction -- 2 Definitions -- 3 Methodology. 4 Results and Discussion.
