Record Nr. UNINA9910491026003321 **Titolo** Advances in usability, user experience, wearable and assistive technology: proceedings of the AHFE 2021 virtual conferences on usability and user experience, human factors and wearable technologies, human factors in virtual environments and game design, and human factors and assistive technology, July 25-29, 2021, USA // Tareq Z. Ahram and Christianne S. Falcao, editors Cham, Switzerland:,: Springer,, [2021] Pubbl/distr/stampa ©2021 **ISBN** 3-030-80091-1 Descrizione fisica 1 online resource (1165 pages) Lecture Notes in Networks and Systems;; v.275 Collana 003 Disciplina Soggetti User-centered system design Self-help devices for people with disabilities Human engineering Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Intro -- Advances in Human Factors and Ergonomics 2021 -- Preface -- Contents -- Human Factors and Wearable Technologies -- Design Principles for Mobile Brain-Body Imaging Devices with Optimized Ergonomics -- Abstract -- 1 Introduction -- 2 Design Process -- 2.1 Design with 3D Anthropometric Data -- 2.2 Dry Electrode and Skin Sensor -- 2.3 Fabrication -- 3 Design Assessment -- 4 Discussion and Future Work -- References -- Training Capabilities Assessment in Support of Enhanced Military Training: Comparing Head-Mounted Displays -- Abstract -- 1 Introduction -- 1.1 Training Proof of Concept -- 1.2 Mixed Reality for Training -- 2 Method -- 2.1 Training Capabilities Assessment -- 3 Results -- 4 Discussion --Acknowledgment -- References -- Interactive Floor Mapping with Depth Sensors -- Abstract -- 1 Introduction -- 2 Review of SLAM Algorithms and Depth Sensors -- 3 Depth-Based SLAM Algorithm -- 4

Registration of the 3D Point Cloud to a Floor Map -- 4.1 Ground Plane Extraction -- 4.2 Floor Map Registration -- 4.3 Floor Mapping with a Floor Plan or Footprint -- 5 Edge Detection -- 6 Conclusions --

Acknowledgment -- References -- Detecting Daytime Bruxism Through Convenient and Wearable Around-the-Ear Electrodes -- Abstract -- 1 Introduction -- 2 Related Work -- 3 Method -- 4 Signal Preprocessing and Inspection -- 5 Classification Results -- 6 Discussion and Conclusion -- References -- On the Diversity of Self-tracking Purposes: Systematizing the Objectives in Tracking Oneself -- Abstract -- 1 Introduction -- 2 Methodological Approach -- 3 Results -- 4 Concluding Remarks -- References -- Wearables for Quality Assurance in Manual Assembly: A Qualitative Study -- Abstract -- 1 Introduction -- 2 Theoretical Background -- 2.1 Wearables -- 3 Research Methodology -- 3.1 Qualitative Interviews -- 4 Results -- 4.1 Digitization Level in Companies. 4.2 Quality Assurance - Problems -- 4.3 Wearables -- 5 Conclusion --References -- The Pattern-Making and Refinement of a Smart Compression Trouser Design for Taiwan University Football Team --Abstract -- 1 Introduction -- 2 Methods -- 2.1 Idea Generation -- 2.2 Smart Trouser Design Development -- 2.3 The Sizing of the Smart Trousers -- 3 Conclusion -- Acknowledgment -- References --Detection of Racial Bias from Physiological Responses -- Abstract -- 1 Introduction -- 2 Background and Related Work -- 2.1 Detecting Bias via the Implicit Association Test (IAT) -- 2.2 Physiological Sensing and its Relation to Bias -- 3 Methods -- 3.1 Data Collection -- 3.2 Data Processing -- 3.3 Machine Learning Analysis -- 4 Results -- 5 Discussion -- 6 Conclusion -- References -- The Importance of Product Language: An Exploratory Study of Smartwatches for Remote Healthcare -- Abstract -- 1 Introduction -- 2 Design and Health -- 3 Design and Gender -- 4 Method -- 5 Discussion and Conclusion --References -- Pilot State Monitoring Wearable Systems in Real Environment: Pilot's Usability and Acceptance Feedback to Enhance Risk Management -- Abstract -- 1 Introduction -- 1.1 Monitoring Pilot State in Real Environment -- 1.2 The Research Objectives -- 2 Methods --2.1 Simulated vs. Real Environment Flights -- 2.2 Design of Pilot-Centered Wearables -- 2.3 Implementing Pilot Feedback -- 3 Results -- 3.1 Step 1: Definition of Wearable and Camera Combination -- 3.2 Step 2: Acceptance and Usability Tool and Protocol -- 3.3 Step 3: Short-Haul and Long-Haul Flights Protocol -- 4 Discussion -- 4.1 Next Steps: Data Collection and Data Analysis -- Acknowledgments --References -- Children's Garments Based Near Filed Positioning Safety Oriented to Intelligence -- Abstract -- 1 Introduction -- 2 Implementing iBeacon Positional Children's Garments -- 2.1 The Firmware Threads. 2.2 The Clothing Design -- 2.3 Circuit Design -- 2.4 Design of the Bluetooth Low Energy Technology -- 2.5 Software Control -- 3 Summary of the Design of the iBeacon-Based Children's Positioning Safety Clothing -- 4 Conclusion -- References -- The Perception and Acceptance of Wearable Fitness Devices Among People and Designing Interventions for Prolonged Use -- Abstract -- 1 Introduction -- 2 Wearable Fitness Technology -- 2.1 Wearable Devices -- 2.2 Awareness

Bluetooth Low Energy Technology -- 2.5 Software Control -- 3
Summary of the Design of the iBeacon-Based Children's Positioning
Safety Clothing -- 4 Conclusion -- References -- The Perception and
Acceptance of Wearable Fitness Devices Among People and Designing
Interventions for Prolonged Use -- Abstract -- 1 Introduction -- 2
Wearable Fitness Technology -- 2.1 Wearable Devices -- 2.2 Awareness
of Wearable Technology Devices Among People -- 3 Study of the
Acceptance of Wearable Fitness Technology -- 3.1 Technology
Acceptance -- 3.2 Unified Theory of Acceptance and Use of Technology
(UTAUT) -- 3.3 Unified Theory of Acceptance and Use of Technology 2
-- 4 Discussion -- References -- Innovative Design of Indigo Print in
Soft Smart Knitted Garments -- Abstract -- 1 Introduction -- 2
Characteristics and Present Situation of Traditional Indigo Print -- 3
Design of Indigo Print in Soft Smart Knitted Garments -- 3.1 Material
Design -- 3.2 Pattern Design -- 3.3 Technological Design -- 4 Guide
to the Design of Soft Smart Knitted Garments by Indigo Print -- 4.1

Cultural Guide -- 4.2 Traditional Technological Guide -- 5 Conclusion -- References -- Evaluation of VR/AR Visual Comfort Based on Color Perception -- Abstract -- 1 Introduction -- 2 Materials and Methods --2.1 Experiment Variables -- 2.2 Experiment Variables -- 2.3 Subjects -- 2.4 Experimental Environment -- 2.5 Experimental Procedure -- 2.6 Data Analysis -- 3 Results and Analysis -- 3.1 Hue -- 3.2 Saturation --3.3 Brightness -- 4 Experimental Verification -- 5 Conclusion --Acknowledgements -- References -- Virtual Reality Applications -- Eye Movements in VR Training: Expertise Measurement and it's Meaning for Adaptive Chess Training -- Abstract -- 1 Introduction -- 2 Related Work -- 3 Method -- 3.1 Study Design -- 3.2 Results. 3.3 Discussion -- 4 Conclusion and Future Work -- References --Framework for Integration of Virtual Reality into Model Based Systems Engineering Approach -- Abstract -- 1 Introduction -- 2 Literature Review -- 2.1 Systems Modeling Language (SysML) -- 2.2 VR in MBSE -- 3 VR-MBSE Framework -- 4 Discussions -- 5 Conclusion --References -- Designing for Rapport with Virtual Agents in a Simulated Mixed Reality Environment: Results from a Pilot Study with Senior Users in the bewARe Project -- Abstract -- 1 Introduction -- 2 Method -- 2.1 Design -- 2.2 Measures -- 2.3 Participants -- 3 Results -- 3.1 Rapport Scale -- 3.2 Interviews -- 4 Discussion -- Acknowledgments --References -- How Simulation Training Can Benefit from Virtual Reality Extensions? Case: A Virtual Reality Extension to a Simulated Ship Bridge for Emergency Steering Training -- Abstract -- 1 Introduction -- 2 Related Work -- 3 Technical Setup -- 4 Training Setup -- 5 Test Setup -- 6 Test Results -- 7 Conclusion and Future Work -- References --User Individual Characteristics and Perceived Usability in Immersive HMD VR: A Mixed Method Explorative Study -- Abstract -- 1 Introduction -- 1.1 User Individual Factors Possibly Affecting Usability -- 2 Method -- 2.1 Participants and Equipment -- 2.2 Experimental Task -- 2.3 Questionnaires -- 2.4 Analyses -- 3 Results -- 3.1 Quantitative Data -- 3.2 Qualitative Data -- 4 Discussion -- 5 Conclusion -- Acknowledgements -- References -- Evaluating User Experience in Sandbox Game's Development Environment in Higher Education -- Abstract -- 1 Introduction -- 2 Methodology -- 3 Results -- 4 Analysis -- 5 Discussion -- 6 Conclusion and Future Work --References -- Towards Understanding of User's Immersion Using Electroencephalogram (EEG) and Activity-Adhered Biosensor in an Environment of Full-Body Game Gesture -- Abstract -- 1 Introduction. 1.1 Electroencephalogram (EEG) and Activity-Adhered Biosensor -- 2 Research Method -- 2.1 Participant, Equipment, and Full-Body Game Gesture -- 2.2 EEG Wearable Headband and Activity Adhered Biosensor -- 2.3 Procedure Collecting and Analyzing Data -- 3 Results and Discussion -- 3.1 The Results of the Quantitative Method -- 3.2 The Results of the Qualitative Method -- 3.3 The Analysis of Findings -- 4 Conclusions and Future Works -- Appendix -- References -- Virtual Reality and Game Design in Education -- Developing Interactive Company Presentations in the 3D Glue Virtual Reality Environment: A Collaborative Educational Approach -- Abstract -- 1 Introduction -- 2 Theoretical Background -- 2.1 Company Presentation Including Cocreation and Collaborative Learning Approaches -- 3 Methodology --3.1 Settings and Research Questions -- 3.2 Participants -- 3.3 Instruments for Virtual Workshop Design and Survey -- 4 Results -- 5 Conclusion and Future Work -- Acknowledgments -- References -- A Theoretical Model of Video Game Design in the Educational Context --Abstract -- 1 Introduction -- 2 Game Design of Educational Video Games -- 3 The Educational Video Games Design Model Proposed by Navarro, Zapata, Vega and Chirogue (2018) and Its Revisions -- 4

Modifications of the Model by Navarro et al. [11] Based on the Development Experiences of Three Video Games -- 4.1 Modification 1: Hierarchy and Structure of the Model -- 4.2 Modification 2: Conceptual Clarity -- 5 Conclusions -- References -- Behind the Chain Coffee Shop: Design of Utilizing Virtual Reality for Coffee-Making Training -- Abstract -- 1 Introduction -- 2 Related Work -- 3 The Development of VR Coffee-Making Training System Design -- 3.1 Qualitative Data Analysis -- 3.2 System Design -- 4 Discussion -- 5 Limitation -- 6 Conclusion -- References.

Efficacy of Romantic Poetry: Chinese Classical Poetry Education Project Based on Augmented Reality Technology for Elementary School Students.