1. Record Nr. UNISA996464444303316 Digital human modeling and applications in health, safety, ergonomics **Titolo** and risk management . Part II: AI, product and service: 12th International Conference, DHM 2021, held as part of the 23rd HCI International Conference, HCII 2021, Virtual event, July 24-29, 2021, proceedings / / Vincent G. Duffy, editor Cham, Switzerland:,: Springer,, [2021] Pubbl/distr/stampa ©2021 **ISBN** 3-030-77820-7 Descrizione fisica 1 online resource (445 pages) Lecture Notes in Computer Science; ; v.12778 Collana Disciplina 612.76 Soggetti Human mechanics Medical care - Data processing Lingua di pubblicazione Inglese **Formato** Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Intro -- Foreword -- HCI International 2021 Thematic Areas and

Affiliated Conferences -- Contents - Part II -- Contents - Part II -- Rethinking Healthcare -- Development and Testing of a Usability Checklist for the Evaluation of Control Interfaces of Electrical Medical Beds -- 1 Introduction -- 1.1 Electrical Medical Beds -- 1.2 Human Factors on Medical Beds -- 1.3 Usability Checklist -- 2 Materials and Methods -- 2.1 Checklist Development -- 2.2 Scoring and Measures -- 2.3 Experimental Procedure -- 3 Results -- 4 Discussion -- 5 Conclusions -- Appendix -- References -- Kits for Patients with Transtibial Amputation in the Pre- and Post-prosthetic

Phases -- 1 Introduction -- 2 Special Care of the Lower Limb Amputee in the Pre- and Post-prosthetic Phases -- 3 Quality of Life of Amputees -- 4 Materials and Methods -- 5 Results -- 5.1 Pre-prosthetic Kit -- 5.2 Post-prosthetic Kit -- 6 Discussion -- 7 Conclusion -- References

-- Research on Social Innovation Design of SCD Pre-hospital Emergency Equipment Based on IoT Technology -- 1 Preface -- 2 Background -- 3 Current Situation of First Aid Equipment -- 3.1 Medical Stretcher -- 3.2 AED -- 4 User Research -- 5 Design Examples

-- 5.1 Design Direction -- 5.2 Design Description -- 5.3 Detail Design

-- 5.4 Humanistic Design -- 5.5 Technical Support -- 5.6 Business Model -- 5.7 Innovation Advantage -- 6 Epilogue -- References --Towards a Practical Approach for Assessing Pressure Relief Activities for Manual Wheelchair Users in Their Daily Lives -- 1 Introduction -- 2 Method -- 2.1 Mobile-End Specification -- 2.2 A Threshold-Based Approach to Facilitate Data Collection -- 2.3 Using Convolutional Neural Network to Classify Sensor Data -- 2.4 Data Storage -- 2.5 Experiments -- 3 Results -- 4 Discussion -- 4.1 Study Limitation -- 5 Conclusion and Future Research Directions -- References. Principles for Designing an mHealth App for Participatory Research and Management of Chronic Pain -- 1 Introduction -- 2 Conceptual Framework and Scientific Basis -- 3 Research Process and Findings --3.1 Literature Review of Considerations for Creating a Digital Laboratory for Studying Chronic Pain -- 3.2 Public Consultation: Can We Play the Pain Digitally? -- 3.3 Affordances of Digital Platforms for CP Research and Management -- 4 Prototype -- 4.1 Design Elements -- 4.2 Data Collection -- 4.3 Self-experimentation and Self Expression -- 4.4 Personal Reports and Galleries -- 5 Conclusion --5.1 Summary -- 5.2 Future Work -- References -- Automated Escalation and Incident Management in Healthcare During Mass Casualties and Pandemic Events -- 1 Introduction -- 2 Background --3 Hypercare Escalation -- 3.1 Creating Escalation Logic -- 3.2 Creating Escalation Level -- 3.3 Creating Escalation Policy -- 3.4 Testing Escalation Ladder -- 3.5 Activating Escalation -- 3.6 Escalation Status -- 3.7 Escalation Endpoints -- 3.8 Limitations -- 4 Escalation Use Cases -- 4.1 Getting Ahead of Patient Deterioration -- 4.2 Quality Improvement Audits/Post-mortem Assessments -- 4.3 Attempting to Get in Contact with a Hypercare User -- 4.4 Escalations to Individual Members/Roles Within a Group Message -- 4.5 Critical Results Notifications -- 4.6 Contacting Proxies in the Escalation Ladder (Sender) -- 4.7 Acknowledging Escalations on Another User's Behalf --4.8 Code Orange (Disaster/Mass Casualty) -- 5 Heuristic Evaluation --6 Discussion and Future Work -- References -- Different Patterns of Medication Administration Between Inside and Outside the Patient Room Using Electronic Medical Record Log Data -- 1 Introduction -- 2 Literature Review -- 3 Methodology -- 4 Data Analysis -- 4.1 Hierarchical Task Analysis (HTA) Chart -- 5 Results -- 6 Discussion and Limitations.

References -- Systematic Review of the Importance of Human Factors in Incorporating Healthcare Automation -- 1 Introduction and Background -- 2 Purpose of the Study -- 3 Methodologies -- 4 Results -- 4.1 Co-authorship Analysis -- 4.2 Co-citation Analysis --4.3 Co-occurrence Keywords Analysis -- 4.4 Leading Tables from AuthorMapper -- 4.5 Content Analysis from MAXQDA -- 4.6 Trend Analysis -- 5 Discussion and Future Work -- References --Scenario Planning in Healthcare Development in the VUCA World -- 1 In the World of VUCA -- 1.1 What is VUCA -- 1.2 How to Get Through the VUCA -- 2 Backcasting from the Future 10 years Ahead in the Healthcare Development -- 2.1 Game Changer in the Healthcare Development -- 2.2 Nurse-Centered Care -- 2.3 Algorithm-Driven Data Analysis -- 3 Conclusion -- References -- The Digital Dilemma and the Healthy Nation -- 1 The Digital Dilemma in the Age of Big Data Based on China's National Context -- 1.1 Digital Dilemma for the Masses -- 1.2 Health Nation -- 2 Artificial Intelligence Reinforcement Learning -- 2.1 Overview of Reinforcement Learning --2.2 Problems Facing Reinforcement Learning -- 2.3 Video Games Provide an Environmental Field for Reinforcement Learning -- 3 Video Games Can Lead to Different Types of Reinforcement Learning -- 3.1

The Current Status of Game Typing -- 3.2 The Concept of Combining Video Games with Reinforced Learning -- References -- Development of Autonomous UVC Disinfectant Robot -- 1 Introduction -- 2 Literature Survey -- 3 Objective -- 4 Methodology -- 4.1 Design -- 4.2 Structure -- 4.3 Modeling -- 4.4 Electrical and Electronics Architecture -- 4.5 Component's Used -- 4.6 Software Architecture -- 4.7 Final Assembly -- 5 Testing and Results -- 5.1 Mapping -- 5.2 Localization -- 5.3 Path Planning and Navigation -- 5.4 Safety and Obstacle Avoidance -- 5.5 Disinfection. 6 Discussion and Conclusion -- 7 Perspective/Future Scope --References -- Requirements for a Game-Based Approach to Strengthen Leadership in Health Care -- 1 Introduction -- 2 Method -- 3 Results -- 4 Discussion -- 5 Conclusion -- References -- Towards an Effective Web-Based Virtual Health Intervention: The Impact of Media Platform, Visual Framing, and Race on Social Presence and Transportation Ratings -- 1 Introduction -- 2 Background -- 2.1 Virtual Healthcare Assistants -- 2.2 Social Presence -- 2.3 Transportation -- 3 System Design -- 3.1 Script -- 3.2 ALEX Development -- 3.3 Visual Framing --3.4 Responsive Interface Development -- 4 Experiment -- 4.1 Participants -- 4.2 Study Design and Procedure -- 4.3 Measures -- 5 Results -- 5.1 Social Presence -- 5.2 Transportation -- 6 Discussion --6.1 Smartphone Users Reported Higher Social Presence and Transportation -- 6.2 Effect of Visual Framing Conditions on Social Presence and Transportation Ratings -- 6.3 Limitations -- 7 Conclusion and Future Work -- 7.1 Future Work -- References -- The Design of Outpatient Services in Children's Hospitals Based on the Double Diamond Model -- 1 Introduction -- 2 Theoretical Research -- 2.1 Service Design Concept -- 2.2 Double Diamond Model Concept -- 2.3 Service Design Process Under the Double Diamond Model -- 3 Status Research -- 3.1 Discover -- 3.2 Define -- 4 Design Results -- 4.1 Develop -- 4.2 Deliver -- 5 Conclusion -- References --Artificial Intelligence Applications and Ethical Issues -- Brown Hands Aren't Terrorists: Challenges in Image Classification of Violent Extremist Content -- 1 Introduction -- 1.1 Challenges Associated with Coding Violent Extremist Content -- 2 Approach -- 3 Categorizing Violent Extremist Propaganda -- 4 Evaluation of Approach -- 5 Summary and Future Work -- References. A ibliometric Analysis of Intelligent Agent Researches During 2010-2020 Based on VOS Viewer -- 1 Introduction -- 2 Methodology -- 3 Results -- 3.1 Co-author's Country or Region Analysis -- 3.2 Coauthors, Citations and Journals -- 3.3 Co-citation Network -- 3.4 Hotspots of Papers Related to Intelligent Agent -- 4 Discussion -- 4.1 Research Trends Related to Intelligent Agent -- 4.2 Limitations -- 5 Conclusion -- References -- What if: Human Rights vs Science or Both? -- 1 Introduction - A Personal Point of View with Background -- 2 Bioethical Aspect: Can a Disability Be 'Fixed'? -- 3 The Renaissance of Medical Rehabilitation - Are Human Rights Pushed into the Background? -- 4 Artificial Intelligence: Can a Revolution in Independent Living and Post-renaissance Polymaths Come? -- 5 Brain-Machine Implants: Is 'Cybernation' Coming? -- 6 Conclusions --References -- Sources of Risk and Design Principles of Trustworthy Artificial Intelligence -- 1 Introduction -- 1.1 Artificial Intelligence --1.2 Current Status and Forecast Potential -- 1.3 Areas of Application and Sample Applications -- 2 Trustworthy Artificial Intelligence -- 3 Al Characteristics with an Impact on Trustworthiness -- 3.1 Degree of Automation and Control -- 3.2 Degree of Transparency -- 3.3 Intended Operating Environment -- 3.4 Development Process -- 3.5 System-Hardware -- 3.6 Technological Maturity -- 3.7 Privacy -- 3.8

Fairness -- 4 Measures -- 4.1 Inherently Safe Design -- 4.2 Safety Margins -- 4.3 Fail Safe -- 4.4 Safety-Related Protective Measures -- 5 Conclusion -- References -- Analysis of the Application of Artificial Intelligence in the Creative Space -- 1 Introduction -- 2 Artificial Intelligence and Creative Space -- 3 The Application of Artificial Intelligence in the Creative Space -- 3.1 Intelligent Management Processes -- 3.2 Intelligent Material Management.

3.3 Intelligent Online Communication.