1. Record Nr. UNINA9910627278303321 Autore Klempous Ryszard Titolo Accentuated innovations in cognitive info-communication / / Ryszard Klempous, Jan Nikodem, and Peter Zoltan Baranyi Cham, Switzerland: ,: Springer International Publishing, , [2022] Pubbl/distr/stampa ©2022 **ISBN** 3-031-10956-2 Descrizione fisica 1 online resource (264 pages) Collana Topics in Intelligent Engineering and Informatics Disciplina 153 Cognitive science Soggetti Human-computer interaction - Mathematical models Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia

Nota di contenuto

Intro -- Preface -- Contents -- *-1pc Different Aspects of Cognitive Systems -- Methods for Analyzing Cognitive Architecture -- 1 Introduction -- 2 Adaptable Functions -- 3 Symmetry -- 4 Simulation Systems -- 5 Related Work -- 6 Conclusions -- References --Cognitive Resonance and the Architecture Issues of Cognitive Information Systems -- 1 Introduction -- 2 What Makes CIS and What Is UBMSS? -- 3 UBMSS Versus CIS in Light of Zachman Framework -- 4 Cognitive Infocommunication and Cognitive Information Systems -- 5 Cognitive Mapping Approaches for Research of Cognitive Infocommunication -- 6 The Mental Model for the Carbon Agent -- 7 Reality and Expectations Form CIS in the Enterprise Environment -- 8 Zachman Architecture and Its Cognitive Elements -- 9 Cognitive Infocommunication in the Relation of CIS and Its Architecture -- 10 Conclusions -- References -- Dyspraxia: An Experimental Clinical Model for the Study of the Embodied Cognition -- 1 Introduction -- 2 Essential Aspects of the Embodied Cognition Theory -- 3 Clinical Description -- 4 Sensory Integration in the Dyspractic Child -- 5 The Voluntary Movement -- 6 Dyspraxia and Embodied Mind -- 7 An Extensive Research Program on the Emergence of the Mind from the Body -- References -- *-1pc Exploring the Use and Application of Virtual Reality -- Role of Presence, Memory and Spatial Ability in a Desktop Virtual Reality -- 1 Introduction -- 1.1 Desktop Virtual Reality

Role of Prior Experience -- 4 Human Memory -- 4.1 Visual Memory and the Picture Superiority Effect -- 4.2 Presence and Memory -- 4.3 Virtual Memory Palaces -- 4.4 Highlight Visual Information in Virtual Spaces --4.5 Supplementary Information -- 5 Conclusion -- References. Experiences and Guidelines for Developing 3D VR Curricula -- 1 Introduction -- 2 The MaxWhere VR Platform -- 3 The Main Outcomes of Examinations by VR Learning Research Lab -- 4 Key Concepts and Definitions -- 5 Research Framework -- 5.1 Hypotheses -- 5.2 Applied VR Spaces -- 6 Discussion -- 6.1 Clear Educational Goal -- 6.2 Spatial Awareness -- 6.3 Digital Fragmentation -- 6.4 Digital Workflow -- 6.5 Online Collaboration -- 6.6 Control Questions and Feedback -- 7 Research Results -- 7.1 Specification of Educational Goal -- 7.2 Spatial Awareness -- 7.3 Digital Fragmentation -- 7.4 Online Collaboration --7.5 Control Questions and Feedback -- 8 Experiences in the Practical Application of VR Teaching Materials -- 8.1 Hypothesis 1 -- 8.2 Hypothesis 2 -- 8.3 Hypothesis 3 -- 8.4 Hypothesis 4 -- 9 Support to Developing Quality VR Curriculum -- 10 Conclusion -- References --Text-Based Second Language Learning in the Three-Dimensional Space -- 1 Introduction -- 2 The Cultural Inheritance of the Library of Alexandria -- 3 Callimachus and the Catalogue of the Library of Alexandria -- 4 The 3D Virtual Library Model -- 5 Application of the 3D Virtual Library Model for Presenting Selected Wikipedia Texts About Callimachus -- 6 Conclusions: Toward Successful Text-Based Language Learning in a Virtual 3D Environment -- References -- Interaction Patterns of Spatial Navigation and Smartboard Use in VR Workspaces --1 Introduction -- 2 Spatial Abilities -- 2.1 Spatial Visualization -- 2.2 Spatial Orientation -- 3 Spatial Navigation -- 3.1 Spatial Navigation in Virtual Reality -- 4 The MaxWhere Virtual Reality Platform -- 5 Aim of the Study -- 5.1 Modalities of Interaction at the Center of Analysis -- 6 Methods -- 6.1 Subjects -- 6.2 Maxwhere Virtual Reality Environment -- 6.3 Procedure -- 6.4 Measurements Recorded -- 7 Results -- 7.1 Video Game Usage Habits. 7.2 Spatial Preference Points and Orientations -- 7.3 Activation and Deactivation of Smartboards -- 8 Discussion -- 9 Conclusion --References -- Towards Rapid Prototyping of Digital Twins Based on Hand-Held Video -- 1 Introduction -- 2 Theoretical Motivations -- 2.1 Industry 4.0 and Smart Manufacturing -- 2.2 The Role of Digital Twins in Smart Manufacturing -- 2.3 The Role of VR in Increasing the Usability of Digital Twins -- 2.4 Role of Convolutional Neural Network Variants in DTs -- 3 Experimental Evaluation of Video-Based Object Recognition -- 3.1 The YOLO Family of Algorithms -- 3.2 Experimental Results -- 4 Framework for Al-Supported Digital Twin Creation in VR -- 5 Conclusion -- References -- *-1pc Possible Practical Applications -- Finding Treasure in the Wild: A Field Study of a Collaborative Design Software -- 1 Introduction -- 2 Related Work -- 2.1 Going into the Wild: Ethnography and Field Study -- 2.2 Ethnography -- 2.3 Field Study -- 2.4 Collaborative Software Research Based on Ethnography and Field Studies -- 3 Aims and Context of Research -- 4 Method --4.1 The Evaluated Collaborative Software-Figma -- 4.2 Participants --4.3 Procedure -- 4.4 Analysis -- 5 Results -- 5.1 General Experience of Participants with Figma -- 5.2 Artifact Usage: Whiteboard and Notebook -- 5.3 Results Based on the Mechanics of Collaboration Framework -- 6 Discussion -- 7 Conclusion -- 8 Limitations -- 9 Future Work -- References -- Identifying the Function of Hand Gestures from Their Form in Political Speech -- 1 Introduction -- 2 Background Studies -- 2.1 Taxonomies of Gestures -- 2.2 The

-- 1.2 MaxWhere Virtual Reality -- 2 Role of Spatial Abilities -- 3 Sense of Presence -- 3.1 Presence Profile of MaxWhere Virtual Reality -- 3.2

Recognition of Hand Gestures and Related Studies -- 3 The Videos and the Annotations -- 3.1 The Annotations of Hand Gestures -- 4 The Automatic Classification of Semiotic Types -- 5 Discussion -- References.

User Interface Design Based on Traditional Japanese Air Finger Drawings, "Soragaki" -- 1 Introduction -- 1.1 Cognitive Infocommunications and Gesture User Interface -- 1.2 Problems with Gesture User Interface -- 1.3 The Aim of This Research -- 2 Related Works -- 2.1 Early Studies of the Gesture User Interface -- 2.2 Gesture UI with Wearable Devices -- 3 Proposed Method -- 3.1 Requirements for Gesture -- 3.2 "Soragaki" Gestures -- 3.3 Gesture Recognition by Machine Learning -- 4 Test Device -- 5 Experiment -- 5.1 The Result of Gesture Recognition by Machine Learning -- 5.2 Subjective Evaluation of Gestures -- 6 Conclusion -- References -- RobotCore-A General Multi-robot Simulation Framework -- 1 Introduction -- 1.1 Requirements -- 2 Background and Related Work -- 2.1 Multi-robot Systems -- 2.2 Background -- 2.3 Existing Simulation Frameworks --2.4 Human-Robot Collaboration and Learning -- 3 RobotCore Framework -- 3.1 Architecture -- 3.2 Operation -- 3.3 Plug-Ins -- 4 Example Simulation -- 4.1 3D Filling Problem -- 4.2 Model -- 4.3 Formalization -- 4.4 Simulation Setup -- 4.5 Test and Evaluation -- 5 Manual Testing -- 5.1 Test Case Editor -- 5.2 Real-Time Simulation --6 Future Work -- 6.1 Virtual City -- 6.2 Deployment on Real Robots --7 Conclusions -- References -- Index.