

1. Record Nr.	UNISA996464383103316
Titolo	Augmented cognition : 15th international conference, AC 2021, held as part of the 23rd HCI International Conference, HCII 2021, virtual event, July 24-29, 2021, proceedings / / Dylan D. Schmorow, Cali M. Fidopiastis (editors)
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-78114-3
Descrizione fisica	1 online resource (496 pages)
Collana	Lecture Notes in Computer Science ; ; 12776
Disciplina	004.019
Soggetti	Human-computer interaction User-centered system design Cognition
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 -- BCI and Brain Activity Measurement -- Distributed Remote EEG Data Collection for NeuroIS Research: A Methodological Framework -- 1 Introduction -- 2 Background -- 3 Method -- 3.1 Workshop -- 3.2 Literature Review -- 4 Methodological Framework for Distributed EEG Data Collection -- 4.1 Instrument Related Challenges and Recommendations -- 4.2 Technical and Logistic Challenges -- 5 Summary and Discussion -- References -- Neurochat: Artistic Affective State Facial Filters in Online Video Communication -- 1 Introduction -- 2 Neurochat Architecture -- 3 Methodology -- 3.1 Participants -- 3.2 Equipment -- 3.3 Face Detection and Filters -- 3.4 Affective State Classification -- 3.5 Study Design -- 3.6 Procedures -- 4 Results -- 4.1 System Usability Scale -- 4.2 Participant Feedback -- 5 Conclusion and Future Work -- References -- A New Methodology to Learn Loops: Validation through Brain Computer Interaction -- 1 Introduction -- 2 Related Work -- 3 The Proposed Methodology -- 4 The Study -- 5 Results Analysis -- 6 Conclusions -- References -- Individual Differences in fNIRS Measures

of Cognitive Workload During a UAS Mission -- 1 Introduction -- 2 Methods -- 2.1 Participants -- 2.2 Experimental Protocol and UAS Simulator -- 2.3 Measurements -- 2.4 Data Analysis -- 3 Results -- 3.1 Behavioral Performance -- 3.2 Hemodynamic Response -- 4 Discussion -- References -- Brain Activity Changes Elicited Through Multi-session Training Assessment in the Prefrontal Cortex by fNIRS -- 1 Introduction -- 2 Materials and Methods -- 2.1 Participants -- 2.2 UAS Simulator -- 2.3 Functional Near Infrared Spectroscopy Sensor -- 2.4 Experimental Protocol -- 2.5 Pre-processing and Feature Extraction -- 2.6 Statistical Analysis -- 3 Results -- 4 Discussion -- References.

Using Brain Computer Interaction to Evaluate Problem Solving Abilities -- 1 Introduction -- 2 Material and Methods -- 2.1 Subjects -- 2.2 Participants and Task -- 2.3 EEG Acquisition -- 2.4 Data Analysis -- 3 Results -- 4 Discussion and Conclusion -- References -- Analysis of Effect of RSVP Speller BCI Paradigm Along with CNN to Analysis P300 Signals -- 1 Introduction -- 2 Proposed Methodology - RSVP and P300 Speller Paradigm -- 3 Feature Extraction and Classification for Predicting Target and Non-target Character -- 4 Experiment Results and Analysis -- 4.1 Confusion Matrix for Performance Measure -- 4.2 Comparison CNN Model on a Different Dataset -- 4.3 Comparison of Neural Network, CNN Model on a Different Dataset -- 5 Conclusion -- References -- A Literature Review on a Neuro-Psychological Approach to Immersive Technology Research -- 1 Introduction -- 2 Background -- 3 Search Strategy -- 4 Bibliometric Analysis -- 4.1 Research Context -- 4.2 Types of EEG Analysis Methods -- 5 Thematic Analysis -- 5.1 Mental Load -- 5.2 Embodiment -- 5.3 Spatial Navigation -- 5.4 Presence -- 5.5 Emotion -- 5.6 Postural Control -- 6 Discussion -- 6.1 Future Research Direction -- 6.2 Contribution to Research -- References -- Physiological Measuring and Human Performance -- Cognitive Workload Quantified by Physiological Sensors in Realistic Immersive Settings -- 1 Introduction -- 1.1 Background -- 1.2 Physiological Biomarkers of Cognitive Workload -- 2 Methodology -- 2.1 Participants -- 2.2 Sensors and Simulators Used -- 2.3 Scenarios and Protocol -- 2.4 Data Analysis -- 3 Results -- 3.1 Self-report Questionnaires -- 3.2 Functional Near-Infrared Spectroscopy -- 3.3 Other Physiological Measures -- 4 Discussion -- 4.1 Cognitive Load via Self-report Questionnaires -- 4.2 Cognitive Load via Biometrics -- References.

Pressure Analysis in Dynamic Handwriting for Forgery Detection -- 1 Introduction -- 2 Background -- 3 Pressure -- 4 Motivation -- 5 Implementation/Analysis -- 5.1 Results -- 6 Conclusion -- References -- Goal Orientation in Human Computer Interaction Tasks: An Experimental Investigation of User Engagement and Interaction Modalities -- 1 Introduction -- 1.1 User Engagement Scale and Goal Orientation Scale -- 1.2 Research Questions and Design -- 1.3 Human Computer Interaction Modalities -- 2 Methodology -- 2.1 Participants -- 2.2 Materials -- 2.3 Procedure -- 3 Results -- 3.1 Task Completion Times -- 3.2 User Engagement Scores -- 4 Discussion and Conclusion -- References -- Repurposing the Quality Adjusted Life Year: Inferring and Navigating Wellness Cliques from High Sample Rate Multi-factor QALY -- 1 Background -- 1.1 Purpose and Definitions -- 1.2 Standard QALY -- 1.3 Wellness Features -- 1.4 Assessing Wellness Features -- 2 Repurposing the QALY -- 2.1 Quality Space -- 2.2 Multi-factor EQALY Process -- 2.3 The Weighting Functions -- 3 The Human Trial -- 3.1 Experimentation -- 3.2 Avatar Simulation -- 3.3 Human Trials with Members of the U. S. Winter Olympic Team -- 3.4 The Study Architecture -- 3.5 Sample Report Generated by the Recommender Expert System -- 3.6 Wellness Recommender System Application -- 3.7

Recommendation and Forecast Sample Report -- 3.8 Gradient-Descent
 Lifeline Optimization -- 4 Conclusion -- References -- Comparison
 Study of Attention Between Training in a Simulator vs. Live-Fire Range
 -- 1 Introduction -- 2 Procedure -- 2.1 Method -- 3 Results -- 3.1
 Fatigue -- 3.2 Firearms Performance -- 3.3 Physiology -- 4 Discussion
 -- References -- Passphrase Authentication and Individual
 Physiological Differences -- 1 Introduction -- 2 Theoretical
 Background: Psychophysiological Factors -- 3 Methodology -- 3.1
 Population Sample Description.
 3.2 Passphrase Rules for the Survey Instrument -- 3.3
 Electrophysiological Data Collection Procedure -- 3.4 Data Analysis --
 4 Results -- 4.1 Passphrase Recall: Overall Scores -- 4.2 Passphrase
 Recall: Physiological Responses -- 5 Discussion -- 5.1 HRV Heart Rate
 Variability and EDA Electrodermal/Skin Conductance Activity -- 5.2
 fEMG Facial Electromyography/Corrugator Supercilii Muscle -- 6
 Conclusion -- References -- Visual Hierarchy and Communication
 Effectiveness in Medical Decision Tools for Surrogate-Decision-Makers
 of Critically Ill Traumatic Brain Injury Patients -- 1 Introduction -- 1.1
 Visual Hierarchy and Navigation Design -- 1.2 Visual Hierarchy
 and Images -- 2 Eye Tracking Experiment -- 2.1 Prototypes -- 3
 Results -- 3.1 Navigation Design -- 3.2 Visual Hierarchy Through
 Images -- 3.3 Discussion -- 3.4 Limitations and Future Research -- 4
 Conclusion -- References -- Stepwise Evaluation Methodology
 for Smart Watch Sensor Function and Usability -- 1 Introduction -- 2
 Background -- 2.1 Augmented Cognition and Wearable Devices -- 2.2
 Consumer-Grade Smart Watches -- 2.3 Technology Acceptance -- 3
 Evaluation Methodology -- 3.1 Stepwise Approach -- 3.2 Device
 Selection -- 3.3 Team Tests -- 3.4 Lab User Tests -- 3.5 Field User
 Tests -- 3.6 Data Analysis Considerations -- 4 Amazfit Bip S Smart
 Watch Evaluation -- 4.1 Overview -- 4.2 Methods -- 4.3 Amazfit
 Results -- 4.4 Amazfit Evaluation Implications -- 5 Conclusion --
 References -- Modelling Human Cognition -- Kantian Computational
 Linguistics -- 1 Linguistics -- 1.1 Structure of Language -- 1.2
 Structure of Language -- 1.3 Syntax and Semantics -- 1.4 Grammatical
 Structure -- 1.5 Elements of Cognitive Equity -- 1.6 Semantic
 Equivalence -- 2 Need for a New Approach -- 2.1 Integrating WordNet
 -- 2.2 Other Approaches -- 2.3 Opportunity: Seat at the Philosopher's
 Table.
 2.4 David Hume: An Enquiry Concerning Human Understanding -- 2.5
 John Locke: Essay Concerning Human Understanding -- 2.6 Kant's
 Categories -- 3 Proposal -- References -- Exploring Relationship
 Between Driver's Behavior and Cognitive Measures Observed by fNIRS
 in a Driving Simulator -- 1 Introduction -- 2 Materials and Method --
 2.1 Participants -- 2.2 Procedure -- 2.3 Data Analysis and Statistics --
 3 Results and Discussion -- 3.1 Cognitive Activity at Different Driving
 Conditions -- 3.2 Cognitive Activity at Different Speed Under Dual-
 Tasking -- 3.3 Limitations of the Study -- 4 Conclusion -- References
 -- Automatic Engagement Recognition for Distance Learning Systems:
 A Literature Study of Engagement Datasets and Methods -- 1
 Introduction -- 2 Engagement Datasets -- 2.1 Public Available
 Engagement Datasets -- 2.2 Non-public Engagement Datasets -- 3
 Automatic Engagement Estimation -- 4 Discussion -- 5 Conclusion --
 References -- The Impact of Auditory Based Immersive Virtual Travel
 Experience on Mental Health of the Visually Impaired -- 1 Introduction
 -- 2 Methodology -- 2.1 Symptom Checklist-90 Revised (SCL-90-R) --
 2.2 Other Surveys -- 2.3 Participants -- 2.4 The Play Tools for Auditory
 Based Immersive Virtual Travel Experience Tests -- 2.5 The Audio Files
 for Auditory Based Immersive Virtual Travel Experience -- 3 Results

and Discussion -- 4 Conclusion -- References -- New Methods for
Metastimuli: Architecture, Embeddings, and Neural Network
Optimization -- 1 Objective and Significance -- 2 Methods -- 2.1
Integrated PIMS Classification -- 2.2 Recurrent PIMS-trained ANN --
2.3 Null Set Validation -- 2.4 Atom Embeddings -- 2.5 Meta- and
Hyper-parameter Optimization -- 2.6 PIMS ANN as a Classifier, A
Bonus Application -- 3 Results -- 3.1 Learning by Epoch -- 3.2 Meta-
and Hyper-parameter Optimization -- 4 Discussion.
4.1 Optimal Meta-Parameters and Hyper-parameters.
