

**15<sup>th</sup> MULTI CONFERENCE ON COMPUTER SCIENCE AND  
INFORMATION SYSTEMS  
21 - 23 July 2021**

**15<sup>th</sup> International Conference on Interfaces and Human Computer Interaction  
14<sup>th</sup> International Conference on Game and Entertainment Technologies  
15<sup>th</sup> International Conference on Computer Graphics, Visualization, Computer Vision  
and Image Processing  
6<sup>th</sup> International Conference on Big Data Analytics, Data Mining  
and Computational Intelligence**

**CONFERENCE PROGRAM**

**IMPORTANT NOTICE:** listed times are in GMT+1, you can check your timezone at <https://greenwichmeantime.com/time-zone/gmt-plus-1/> (you can use the provided URL to insert your location and see your time in relation to GMT+1).

**Wednesday 21<sup>st</sup> July 2021**

**09:00 – 09:15 Session O – Opening Session**

*Profs. Katherine Blashki, Ajith Abraham and Yingcai Xiao*

**09:15 – 10:15 Session KL1 – Keynote Presentation**

**ENGINEERING THE HCI**

*Associate Professor José A. Macías Iglesias, Escuela Politécnica Superior, Universidad Autónoma de Madrid, Spain*

**10:15-10:30 Break**

**10:30-12:20 FSP 21.1**

**HCI and Design education // Usability**

*Chair: Katherine Blashki*

**A SERVICE-DOMINANT LOGIC BASED FRAMEWORK FOR TEACHING INNOVATION IN HCI (F073)**

*Amela Karahasanović and Alma Leora Culén*

**HUMAN CENTERED DESIGN PROCESS ASSESSMENT (F079)**

*Rüdiger Heimgärtner*

**TELEWORK OF INTERIOR ENVIRONMENT IN JAPANESE STUDENT (S023)**

*Takeshi Sato, Mizuki Nakajima, Ryota Murano, Macky Kato and Yousuke Takeishi*

**DESIGN GUIDELINES FOR MOBILE APPLICATIONS (F045)**

*Isaac Senga Lupanda and J.T. Janse van Rensburg*

**RESEARCH ON THE INTERFACE USABILITY OF HOSPITAL WECHAT PUBLIC PLATFORM IN THE FORM OF INTERNET (F018)**

*Chen-Rao Zhong, Chien-Hsiung Chen and Jin-Long Lin*

**12:20 – 14:00 Break**

**14:00-15:55 Session FSP 21.2**

**Prototypes // Genre**

**Chair: Swati Chandna**

**GESTURE-BASED HEAD-MOUNTED AUGMENTED REALITY GAME DEVELOPMENT USING LEAP MOTION AND USABILITY EVALUATION (F034)**

*Pu-Hsuan Chien and Yang-Cheng Lin*

**THE PAC-PAC AUTHORIZING ENVIRONMENT FOR GAME DESIGN TEACHING: TWO LEARNING EXPERIENCES COMPARED (F046)**

*Raffaele Argiolas, Sara Cuccu and Andrea Piano*

**TWEAKING MORAL COMPLEXITY IN VIDEOGAMES? OPTIMISING PLAYER EXPERIENCES ON BASIS OF MORAL COMPETENCE (S022)**

*Benjamin Hanussek, Tom Frank Reuscher and Tom Tucek*

**DEVOPS METHODOLOGY IN GAME DEVELOPMENT WITH UNITY3D (S037)**

*Gabriel Barroso da Silva Lima, Cristina Souza de Araújo, Luis Cuevas Rodriguez, Clairon Lima Pinheiro and Jucimar Maia da Silva Junior*

**HOLOGRAPHIC INTERACTION: FROM DESIGN TO CONSTRUCTION OF A HOLOGRAPHIC DISPLAY ANIMATED BY REAL-TIME MOTION CAPTURE (F069)**

*Gabriel Antonio Corso Anciuati and Mônica Stein*

**16:00-16:15 Break**

**16:15-18:05 Session FSP 21.3**

**Visualization**

**Chair: Yingcai Xiao**

**VISUALIZATION OF THREE-DIMENSIONAL REACHABLE SET FOR THE DUBINS CAR (S022)**

*Pavel Vasev, Andrey Fedotov and Valerii Patsko*

**ANALYSIS AND VISUAL EXPLORATION OF PREDICTION ALGORITHMS FOR PUBLIC BICYCLE SHARING SYSTEMS (F042)**

*Alexandra Cortez Ordoñez and Pere-Pau Vázquez*

**USING FAST MULTIDIMENSIONAL PROJECTIONS TO REVEAL BAND AND CIRCUMPLEX PATTERNS IN REORDERABLE MATRICES (F037)**

*Celmar Guimarães da Silva*

**DATA-ENABLED CRYPTOCURRENCY MARKET ANALYSIS AND VISUALIZATION PLATFORM (S059)**

*Ningbo Zhu, Fei Yang, Mingzhi Zhu, Xinyao Sun and Irene Cheng*

**REAL-TIME OPEN FIELD CATTLE MONITORING BY DRONE: A 3D VISUALIZATION APPROACH (S058)**

*Fei Yang, Ningbo Zhu, Shuonan Pei and Irene Cheng*

**Thursday 22<sup>nd</sup> July 2021**

**09:15 – 10:15 Session KL1 – Keynote Presentation**

**BIG DATA AFFECTIVE AND INTELLIGENT DECISION-MAKING SUPPORT**

*Professor A. Kaklauskas, Vilnius Gediminas Technical University, Lithuania*

**10:15-10:30 Break**

**10:30-11:15 Session FRP 22.1**

**Emotional Design issues / methods / experiences for novel interfaces**

**Chair: Katherine Blashki**

**A NOVEL AUGMENTED REALITY SYSTEM TO SUPPORT VOLUMETRIC VISUALIZATION IN INDUSTRIAL PROCESS TOMOGRAPHY (F071)**

*Yuchong Zhang, Rahul Yadav, Adel Omrani and Morten Fjeld*

**FAMILIAR HOUSEHOLD ITEMS AS PROGRAM OBJECTS (R065)**

*Andrew Cyrus Smith*

**11:15-12:35 Session FSP 22.2**

**Computer Vision**

**Chair: Amela Karahasanović**

**A SINGLE RGB IMAGE BASED 3D OBJECT RECONSTRUCTION SYSTEM (F040)**

*Damiano Orti, Andrea Sanna, Francesco De Pace, Federico Manuri, Francesco Tamburello and Fabrizio Ronzino*

**3D FACE RECONSTRUCTION FROM HARD BLENDED EDGES (F052)**

*Yueming Ding and P.Y. Mok*

**PHYSICALLY BASED MATERIAL SYNTHESIS (S036)**

*Tassilo Scharnagl and Dieter Meiller*

12:35 – 14:15 Break

14:15-16:00 Session FRP 22.3

Supporting user populations from specific Generati // Affective User-Centred Analysis, Design and Evaluation

Chair: *Yingcai Xiao*

**EL MERCADITO WEB: AN ALTERNATIVE FOR REMOTE SALES FROM LOCAL MERCHANTS (F044)**

*Alejandra Del Prado Zetina, Teresa Guadalupe Escamilla Paredes, Ixzel Jiménez Zamora, Alma Delia Sánchez Carbajal and Rocío Abascal Mena*

**CATEGORIES OF USER IMPAIRMENT (F080)**

*Till Halbach and Joshua Thomas Simon-Liedtke*

**LEVERAGING VOICE ASSISTIVE TECHNOLOGY TO ENHANCE HEALTH MONITORING OF OLDER ADULTS (F059)**

*Swaraj Rath and Swati Chandna*

**DESIGNING EDUCATION APPLICATIONS FOR GENERATION Z (R026)**

*Alice Ashcroft*

16:00-16:15 Break

16:15-17:50 FSRP 22.4

Serious Games and entertainment – applications, critiques // Immersiveness and engagement

Chair: *Matthew Fendt*

**MEASURING GAME IMMERSION AND FLOW WITH ELECTROENCEPHALOGRAPHY (F064)**

*Ehm Kannegieser and Johannes Ratz*

**USING INTERACTIVE MOBILE APPS FOR HEALTHCARE EDUCATION WITH A MIGRANT INDIAN POPULATION IN HONG KONG (F018)**

*Matthew William Fendt, Shelby Garner, Cho Lee Wong, Carolin George, Phil Young, Hope Koch, Gina Green and Julia Hitchcock*

**EXPLORING DATA ANALYSIS METHODS TO FIND CORRELATIONS BETWEEN PHYSIOLOGICAL DATA AND FLOW (S049)**

*Ehm Kannegieser and Anita Hensler*

**HEARING (WITH) THE BODY: ENACTIVE CONCEPTION OF BODY IN AUDITORY SENSEMAKING IN GAMES (R030)**

*Oskari Koskela and Kai Tuuri*

16:15-17:00 FRP 22.5

Big Data Analytics, Data Mining and Computational Intelligence

Chair: *Celmar Guimarães da Silva*

**SPELLING BASED RANKED CLUSTERING ALGORITHM TO CLEAN AND NORMALIZE EARLY MODERN EUROPEAN BOOK TITLES (F038)**

*Evan Bryer, Theppatorn Rhujittawiwat, John R. Rose and Colin F. Wilder*

**REPORT ON ESTIMATING RICE FIELD QUALITY USING ARTIFICIAL INTELLIGENCE (R022)**

*Yahjeb Bouha Khattray, Nedra Mellouli Nauwynck, Mamadou Tourad Diallo and Mohamedade Farouk Nanne*

17:00-18:20 Session FSP 22.6

Usability // Participatory design and Cooperative design techniques

Chair: *Rüdiger Heimgärtner*

**TOWARDS USABILITY INTERFACE TRUSTWORTHINESS IN E-COMMERCE SYSTEMS (F069)**

*Andréia Rodrigues Casare, Celmar Guimarães da Silva, Tania Basso and Regina Moraes*

**ACOUSMA: UBIQUITOUS & INTELLIGENT AUDITORY DISPLAYS (F021)**

*Andreas Michelakis, Emmanouil Zidianakis, Asterios Leonidis, Stavroula Ntoa, Margherita Antona and Constantine Stephanidis*

**INVOLVING DIVERSE USERS FOR INCLUSIVE TECHNOLOGY DEVELOPMENT (S074)**

*Kristin Skeide Fuglerud, Till Halbach and Mikael Snaprud*

**Friday 23<sup>rd</sup> July 2021**

08:45-10:15 Session FP 23.1

Pattern Recognition

Chair: *waiting confirmation*

**A 3D SPECTRAL-SPATIAL CLASSIFICATION OF HYPERSPECTRAL REMOTE SENSING IMAGERY USING INCEPTION BASED NETWORK (F045)**

*Douglas Omwenga Nyabuga and Guohua Liu*

**FACE FEATURES-BASED PERSONALITY ASSESSMENT (F030)**

*Krishna Kumar Singh, Sadu Chiranjeevi and Kethavath Sivalal*

**CAPSULE NEURAL NETWORKS IN CLASSIFICATION OF SKIN LESIONS (F027)**

*Evgin Goceri*

**ANALYSIS OF CAPSULE NETWORKS FOR IMAGE CLASSIFICATION (F033)**

*Evgin Goceri*

**08:25-10:15 Session FSP 23.2**

**Psychological, social, and cultural differences in perception and participation // User/player centered design // Other**

**Chair: Katherine Blashki**

**RESEARCH ON THE APPLICATION OF VIRTUAL REALITY INTERGENERATIONAL GAMES TO TRADITIONAL GLOVE PUPPETRY CULTURE (F040)**

*Ya-Fang Chen, Wen-Huei Chou and Yi-Chun Li*

**UNDERSTANDING THE GAP BETWEEN ACADEMICS AND GAME DEVELOPERS: AN ANALYSIS OF GAMASUTRA BLOGS (F059)**

*Jordan Greenwood, Leigh Achterbosch, Andrew Stranieri and Grant Meredith*

**PROTOTYPE DESIGN OF ALLEVIATING CHILDREN'S NIGHTTIME FEARS USING DIGITAL GAME (F024)**

*Ching-Chih Hsu and Wen-Huei Chou*

**A STUDY ON FOLK LITERATURE RESOURCES TO VIDEO GAME (S056)**

*Cheng Meng*

**10:15-10:30 Break**

**10:30-12:30 Session FP 23.3**

**User studies and fieldwork // Supporting user populations with Physical Disabilities // Other**

**Chair: Katherine Blashki**

**WEB-BASED REMOTE SHIP HANDLING SUPPORT SYSTEM USING MOBILE DATA COMMUNICATION (F070)**

*Tsuyoshi Miyashita, Ryota Imai, Masaki Kondo and Tadasuke Furuya*

**BIOBIASED: A SPECULATIVE NEWS APP FOR SYNTHETIC BIOLOGY (F041)**

*Amalia Kallergi*

**PROPOSAL FOR SURROUNDING INFORMATION PRESENTATION SYSTEM FOR THE VISUALLY IMPAIRED (F038)**

*Honomi Chiba and Yutaka Miyaji*

**MAGVI: TOWARDS SALIENCY-DRIVEN VIDEO MAGNIFICATION APPLICATION FOR THE PEOPLE WITH LOW VISION (F062)**

*Prajakta Thakur, Tanay Dalvi, Varun John and Swati Chandna*

**10:30-11:10 Session SP 23.4**

**Big Data Analytics, Data Mining and Computational Intelligence**

**Chair: Junichi Fukumoto**

**EXTRACTION OF TOURIST ATTENTION POINTS FROM LOW-RATED REVIEWS AND CLASSIFICATION BY VIEWPOINT (S032)**

*Junichi Fukumoto and Kazuki Ito*

**M-LEARNING - A MULTI AGENT APPROACH (S016)**

*Terje Solsvik Kristensen and Joachim Coetzee Kjærvi*

**12:30 Best Paper Awards Ceremony and Closing Session**

*Prof. Katherine Blashki, Ajith Abraham and Yingcai Xiao*