# Final Program of the MCCSIS 2022

# Multi Conference on Computer Science and Information Systems

**Conference Sessions:**
**e-Learning 2022**
**ICT, Society and Human Beings 2022**
**e-Health 2022**
**Connected Smart Cities 2022**
**Web Based Communities and Social Media 2022**
**Interfaces and Human Computer Interaction 2022**
**Game and Entertainment Technologies 2022**
**Computer Graphics, Visualization, Computer Vision and Image Processing 2022**
**Big Data Analytics, Data Mining and Computational Intelligence 2022**
**Theory and Practice in Modern Computing 2022**

<mark>**IMPORTANT NOTICE:**</mark> listed times are in <u>**GMT+1**</u>, 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).

## <mark>Tuesday 19th July 2022</mark>

**08:45-18:30 Welcome Desk (Room Eduardo Viana IV)**

**09:30 – 09:45 Session O – Opening Session**
**(Room Eduardo Viana II)**

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| *Profs. Pedro Isaias, Mário Macedo and Piet Kommers* |

**09:45 – 10:45 Session KL1 – Keynote Presentation**
**(Room Eduardo Viana II)**

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| **NEEDS AND TOOLS FOR ARTIFICIAL INTELLIGENCE IN 21ST CENTURY SOCIETY**<br>*Professor Piet Kommers, UNESCO Professor of Learning Technologies, The Netherlands* |

**10:45-11:15 Coffee Break**

**11:15-12:55 FSP A19.1**
**e-Learning Delivery Issues**
**(Room Eduardo Viana II)**
*Chair: Edita Butrime*

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| **VTS+: A VISUAL THINKING STRATEGIES VARIANT FOR LOW-INTERACTIVITY DISTANCE LEARNING (S100)**<br>*Raymund Sison*<br>**SHINE A LIGHT – E-LEARNING INITIATIVES FROM TWO EU PROJECTS (F080)**<br>*Vladan Devedžić, Sonja D. Radenković and Mirjana Devedžić*<br>**UNIVERSITY STUDENTS GRADING BEFORE AND DURING COVID-19 CRISIS (F024)**<br>*Nello Scarabottolo*<br>**A STEM FAMILY E-LEARNING FRAMEWORK TO INCREASE FAMILY ENGAGEMENT IN DISADVANTAGED COMMUNITIES (S088)**<br>*Kate Darmody, Julie Booth, Fergal O'Toole, Alexandra Alcala, Josephine Bleach, Paul Stynes and Pramod Pathak* |

**11:15-12:45 Session FP A19.2**
**Life environment and ICT**
**(Room Eduardo Viana III)**
*Chair: Ina Kayser*

**PROMOTING THE ROAD SAFETY THROUGH THE AUGMENTED REALITY: AN ITALIAN EXPERIENCE IN OCCUPATIONAL SAFETY AND HEALTH (F076)**
*Emma Pietrafesa, Nunzia Bellantonio and Agnese Martini*
**UA INFORMA CONTRIBUTION TO ATTRACT PROSPECTIVE STUDENTS: AN EXPLORATORY STUDY (F074)**
*Margarida M. Marques and Lúcia Pombo*
**TECHNOLOGICAL, ORGANISATIONAL AND PERSONAL FACTORS OF REMOTE WORK: AN EXPLORATORY STUDY (F052)**
*Ina Kayser and Martin Lange*

**12:50 – 14:00 Lunch Break**

**14:00 – 15:00 Session T1 – Special Talk**
**(Room Eduardo Viana II)**

**USING DEEPLY-DIGITAL CURRICULA TO SUPPORT ALPHA GENERATION LEARNERS: FINDINGS FROM A THREE-YEAR STUDY**
*By Cathie Norris, Regents Professor, University of North Texas, USA and Elliot Soloway, Arthur F. Thurnau Professor, University of Michigan, USA*

**14:00-16:00 Session FP A19.3**
**eHealth Applications**
**(Room Eduardo Viana III)**
*Chair: Mário Macedo*

**HUMAN MOVEMENT VARIABILITY ANALYSIS IN OFFICE-WORKERS: A REVIEW (F052)**
*Maria Eduarda Oliosi, Catia Cepeda, Luís Silva, Daniel Zagalo, Phillip Probst, Ana Rita Pinheiro, João Paulo Vilas-Boas and Hugo Gamboa*
**CENTRALIZED OR DE-CENTRALIZED DATA AND ALGORITHMS IN THE FINNISH HEALTH CARE INFRASTRUCTURE (F043)**
*Jussi Salmi and Lisse-Lotte Hermansson*
**CHARACTERIZING MEDICAL ANDROID APPS (F037)**
*Raina Samuel, Iulian Neamtiu, Sydur Rahaman and James Geller*
**COULD MEDICAL APPS KEEP THEIR PROMISES? (F073)**
*Raina Samuel, Iulian Neamtiu and Sydur Rahaman*

**14:30-16:00 Session FP A19.4**
**ICT and effects on humans // Other**
**(Room Eduardo Viana I)**
*Chair: Roelien Goede*

**TECHNOLOGICAL USAGE IN DEVELOPMENTAL UNIVERSITIES: A CASE STUDY OF WALTER SISULU UNIVERSITY OF SOUTH AFRICA (F028)**
*Agyei Fosu*
**COLLEGE/HIGH SCHOOL STUDENTS' CYBERSECURITY CAREER INTEREST (F107)**
*Anthony Joseph, Mary Joseph and Tega Ileleji*
**LEVERAGING SOCMINT: EXTRAPOLATING CTI INTELLIGENCE FROM UKRAINE-RUSSIA CONFLICT (F070)**
*Bipun Thapa*

**15:05-16:05 Session FP A19.5**
**e-Learning Models**
**(Room Eduardo Viana II)**
*Chair: Cathie Norris and Elliot Soloway*

**VIRTUALIZATION PROCESS OF LEARNING IN A DEVELOPING COUNTRY (F109)**
*Mary Ann Barbour El Rassi*
**PREREQUISITES FOR STEM CLASSES USING AN EXAMPLE OF LINEAR ALGEBRA FOR A COURSE IN MACHINE LEARNING: INTERACTIVE ONLINE VS TRADITIONAL CLASSES (F042)**
*Genady Grabarnik, Luiza Kim-Tyan and Serge Yaskolko*

**16:00-16:30 Coffee Break**

**16:30-18:20 Session FSP A19.6**
**Web Based Communities**
**(Room Eduardo Viana II)**
*Chair: Ruth Wario*

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**SOCIAL MEDIA PRESENCE OF PUBLIC ADMINISTRATION AS A TOOL TO EDUCATE TAXPAYERS (S033)**
*Tereza Zichová*
**INVESTIGATING USE AND IMPACT OF SOCIAL MEDIA ON STUDENT ACADEMIC PERFORMANCE:**
**CASE OF A UNIVERSITY IN SOUTH AFRICA (S037)**
*Ruth Wario*
**IMPROVING PHISHING DETECTION VIA PSYCHOLOGICAL TRAIT SCORING (F023)**
*Sadat Shahriar, Arjun Mukherjee and Omprakash Gnawali*
**PROMOTING SOCIAL ACTIVITIES IN AN ONLINE CONFERENCE DURING COVID TIMES: THE CASE OF THE**
**EHSEMI CONFERENCE (S027)**
*Eliza Oliveira, Ana Margarida Almeida, Rita Oliveira, Nuno Ribeiro, Oksana Tymoshchuk, Rita Santos, Andreia Sousa*
*and Lersi Duran*
**ACTIVE-PASSIVE FRAMEWORK FOR DEVELOPING COMMUNICATION STRATEGIES TO COMBAT**
**MISINFORMATION (S025)**
*Safat Siddiqui and Mary Lou Maher*

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**16:30-18:30 Session FP A19.7**
**Data Mining and Clinical Studies // eHealth Decision Support Systems**
**(Room Eduardo Viana III)**
*Chair: Mário Macedo*

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**DIGITAL SUPPORT ACTIVATES YOUNG ELDERLY TO HEALTH-ENHANCING PHYSICAL ACTIVITY (F046)**
*Christer Carlsson and Pirkko Walden*
**CLINICAL DETERIORATION PREDICTION IN BRAZILIAN HOSPITALS BASED ON ARTIFICIAL NEURAL**
**NETWORKS AND TREE DECISION MODELS (F070)**
*Hamed Yazdanpanah, Augusto C. M. Silva, Murilo Guedes, Hugo M. P. Morales, Leandro dos S. Coelho and Fernando G. Moro*
**FEATURE UTILIZATION BY MACHINE LEARNING MODELS FOR COLON CANCER CLASSIFICATION (F079)**
*Douglas F. Redd, Qing Zeng-Treitler, Yijun Shao, Laura J. Myers, Barry C. Barker, Stuart J. Nelson and Thomas F. Imperiale*
**CHARACTERIZING THE CLINICAL LANGUAGE OF OPIOID USE DISORDER (F076)**
*Terri Elizabeth Workman, Joel Kupersmith, Cynthia A. Brandt, Christopher J. Spevak and Qing Zeng-Treitler*

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**16:30-18:25 Session FSP A19.8**
**e-Learning: Technological Issues**
**(Room Eduardo Viana I)**
*Chair: Margarida M. Marques*

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**DESIGNING A PEER-MEDIATION SERIOUS GAME (S085)**
*Nikolaos Kiriazis and Thanasis Hadzilacos*
**AN INCLUSIVE EDUCATIONAL TOOL (F035)**
*Paula Escudeiro, Márcia Campos Gouveia and Nuno Escudeiro*
**USING VIRTUAL REALITY SIMULATION TO REDUCE STAGE FRIGHT DURING PUBLIC APPEARANCES (F017)**
*Roger Seiler and Roberto Coviello*
**VIRTUAL AND IMMERSIVE LEARNING ENVIRONMENTS USING ARTSTEPS: EXPLORATORY STUDY WITH**
**TEACHERS (S112)**
*Sara Cruz and Alexandre Torres*
**AN APPROACH TO SEMANTIC EDUCATIONAL CONTENT MINING USING NLP (F025)**
*Aisha Abdulmohsin Al Abdulqader, Amenah Ahmed Al Mulla, Gaida Abdalaziz Al Moheish, Michael Jovellanos Pinero,*
*Conrado Vizcarra, Abdulelah Al Gosaibi and Abdulaziz Saad Albarrak*

**08:30-15:30 Welcome Desk (Room Eduardo Viana IV)**

**08:45-10:15 Session FP A20.1**
**Higher and Further Education // Online Assessment**
**(Room Eduardo Viana II)**
*Chair: Rusudan Makhachashvili*

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| **CONVERGENT VALIDITY OF INVIGILATED, SUMMATIVE ONLINE ASSESSMENTS IN BUSINESS MATHEMATICS COURSES AND STUDENTS' COMPARATIVE PERFORMANCE IN ONLINE AND OFFLINE ASSESSMENTS (F070)** <br> *Victor K. Y. Chan and Hio Man Lei* <br> **DIGITAL TRANSFORMATION OF COMPLEX EDUCATIONAL SCENARIOS (COMPARATIVE STUDY OF FINAL QUALIFICATION ASSESSMENT FOR FOREIGN LANGUAGES PROGRAMS) (F107)** <br> *Rusudan Makhachashvili and Ivan Semenist* <br> **AN IMPACT STUDY ON THE ARDUINO PROGRAMMING TRAINING FOR BEGINNERS (F039)** <br> *Charito G. Ong, Josan C. Fermano and Albert Christopher P. Daniot II* |

**08:50-11:00 Session FSP A20.2**
**Perspectives on ICT // Desirable goals and ICT**
**(Room Eduardo Viana III)**
*Chair: Janet Liebenberg*

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| **VOTING TECHNOLOGIES – FROM OSTRACON TO E-VOTING (F056)** <br> *Elizabeta Trajanovska Srbinoska, Smilka Janeska Sarkanjac and Branislav Sarkanjac* <br> **BRIDGING THE DIGITAL COMPETENCE GAP: TELL US WHAT YOU NEED (F033)** <br> *Sandra Santos, Margarida Lucas and Pedro Bem-Haja* <br> **ARTIFICIAL INTELLIGENCE AND GENDER EQUALITY: A SYSTEMATIC MAPPING STUDY (F088)** <br> *J. David Patón-Romero, Ricardo Vinuesa, Letizia Jaccheri and Maria Teresa Baldassarre* <br> **EXAMINING THE INFLUENCE OF ABILITY, TRUST, OPPORTUNITY AND MOTIVATION ON IOT SENSORS ADOPTION FOR PREVENTING FOOD WASTE (S094)** <br> *Yanqing Duan, Ram Ramanathan, Usha Ramanathan, Lakshmi Swamy and Katarzyna Pelc* <br> **AUTONOMY AND AUTOMATION: THE CASE OF CONNECTED AND AUTOMATED VEHICLES (S034)** <br> *Fabio Fossa* |

**09:30-11:00 Session FSP A20.3**
**Connected Smart Cities**
**(Room Sousa Pinto)**
*Chair: Meira Levy*

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| **DESIGN CHALLENGES FOR AN ENERGY EXCHANGE PLATFORM ENABLING A SUCCESSFUL ENERGY TRANSITION (F024)** <br> *Zeba Khanam and Aikaterini Bourazeri* <br> **TRANSDESIPLINARY EDUCATIONAL CASE: DEVELOPING A MESH (MUNICIPAL-ENVIRONMENTAL-SOCIAL-HEALTH) PLATFORM (S030)** <br> *Meira Levy, Sivan Spitzer and Michal Pauzner* <br> **DEVELOPING USER- AND TECHNOLOGY-DRIVEN USE CASES FOR SMART CITY APPLICATIONS (S028)** <br> *Robert Otto, Myriam Guedey and Dieter Uckelmann* <br> **MOBILITY DATA PRODUCTS FOR SMART CITY ECOSYSTEMS – A GREENHOUSE GAS BALANCING CASE STUDY (S026)** <br> *Johannes Sautter, Dominik Lis, Jan Kräck, Andreas Helsper, Kai Erlenhardt, Fabienne Schnieders and Udo Lambrecht* |

**09:15 – 09:30 Session O – Opening Session**
**(Room Eduardo Viana I)**

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| *Profs. Katherine Blashki and Pedro Isaias* |

**09:30-11:00 FSP B20.1**
**Emotional Design issues / methods / experiences for novel interfaces**
**(Room Eduardo Viana I)**
*Chair: Katherine Blashki*

**USING EMOTIONAL DESIGN TO RAISE AWARENESS OF INFORMATION SECURITY (F072)**
*Frauke Prott and Margit Scholl*
**UNDERSTANDING VIRTUAL REALITY GAME PLAYERS' SATISFACTION, LOYALTY, AND EXPERIENCE VALUE: A CASE STUDY OF THE BEATSABER (F074)**
*Guan Zhi Wang and Wen Huei Chou*
**A PSYCHOPHYSIOLOGICAL INVESTIGATION OF EMOTIONS EXPERIENCED IN A VIRTUAL REALITY 3D-LEARNING SIMULATION (F093)**
*Sadaf H. Khan, Abhijeet Kujur and Jyoti Kumar*

**10:15-11:00 Talk**
**(Room Eduardo Viana II)**

**ENSURING ACADEMIC QUALITY AND STUDENT SUCCESS IN ELEARNING: EVERYONE HAS A ROLE!**
*Dr Yaping Gao, EDD, Senior Academic Director, Member Services & Partnerships Quality Matters, USA*

**11:00-11:30 Coffee Break**

**11:30-13:10 Session FSP A20.4**
**e-Learning Research Methods and Approaches**
**(Room Eduardo Viana II)**
*Chair: Yaping Gao*

**CRITICAL DETERMINANTS FOR LEARNING ANALYTICS ADOPTION IN HIGHER EDUCATION (F105)**
*Aaron Bere, Patrick Chirilele and Rugare Chitiga*
**FORCED INNOVATION IN A LEARNING ENVIRONMENT: STUDENTS' EXPERIENCE OF DISTANCE LEARNING DURING THE PANDEMIC (F077)**
*Edita Butrime, Dalija Gudaityte, Sigita Morkeviciene, Virginija Tuomaite and Antanas Vitkauskas*
**ANALYSIS OF LEARNING OBJECTS FOR OPTIMIZATION AND DIGITAL TRANSFER REPORT OF INTERMEDIATE RESULTS ON LEARNING PATH IDEAS – FIRST SURVEY (S036)**
*Fabian Dillenhöfer and Bernd Künne*
**AN E-LEARNING ENVIRONMENT FOR INFLUENCING CHILDREN'S ATTITUDES TOWARD ULTRAVIOLET PROTECTION (S069)**
*Sotiroula Theodosi and Iolie Nicolaidou*

**11:30-12:50 Session FSP A20.5**
**ICT and effects on humans**
**(Room Eduardo Viana III)**
*Chair: Yanqing Duan*

**EXPECTATIONS OF SOFTWARE DEVELOPMENT EDUCATION: STUDENTS VS PROFESSIONALS (F041)**
*Janet Liebenberg*
**THE EMERGENCE OF LIMINAL CYBERSPACE – CHALLENGES FOR THE ONTOLOGICAL WORK IN CYBERSECURITY (F066)**
*Jukka Vuorinen and Ville Uusitupa*
**TESTING PUBLIC WARNING SYSTEM AT SCHOOL WITH USER INVOLVEMENT - CASE STUDY FROM A RURAL COMMUNITY (S030)**
*Anna Maria Urbaniak-Brekke, Øyvind Heimset Larsen and Ivar Petter Grøtte*

**11:30-13:15 Session FP B20.2**
**Emotional Design issues / methods / experiences for novel interfaces // Social and cultural uses of/for Play**
**(Room Eduardo Viana I)**
*Chair: Katherine Blashki*

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**PATIENT USER INTERFACES FOR DETERMINING PAIN LEVEL THROUGH EVERYDAY SMARTPHONE TASKS AND WEARABLE PHYSIOLOGICAL SIGNAL SENSORS (F033)**
*Ashraf Khalil, Suha Glal and Salam Abdallah*
**THE IMPACT OF TEST ELEMENTS ON STUDENTS' PERFORMANCE IN EFL ASSESSMENT (F024)**
*Joma Alrzini, Diane Rasmussen Pennington and Mark D Dunlop*
**ESTIMATION OF HUMAN EMOTION DEFINED WITH RUSSELL'S CIRCUMPLEX MODEL USING LIGHTWEIGHT FNIRS DEVICE (F045)**
*Daisuke Fukui, Takushige Katsura, Masashi Egi, Norihisa Komoda and Takenao Ohkawa*
**WE NEED TO FOCUS ON RULES (R023)**
*Luiz Cláudio Silveira Duarte and Adriano Furtado Holanda*

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**11:30-13:10 Session FP B20.3**
**Computer Graphics // Visual Analytics // Others**
**(Room Sousa Pinto)**
*Chair: Furkan Kaynar*

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**PROFESSIONAL COURSE OFFERED WITHIN A TECHNICAL ACADEMY CONCERNING THE INNOVATIVE BIM TECHNOLOGY (F055)**
*Alcínia Zita Sampaio and Augusto Gomes*
**VISUAL ANALYSIS OF ENVIRONMENTAL NOISE DATA(F033)**
*Juan José Franco Moreno, Rosa Maria Alsina-Pages and Pere Pau Vázquez Alcocer*
**BIM TEACHING AND PROGRAMING IN DYNAMO APPLIED IN THE MAINTENANCE OF BUILDINGS (F058)**
*Alcínia Zita Sampaio, Inês Domingos and Augusto Gomes*
**ODIN: A FRAMEWORK FOR ERROR DIAGNOSIS OF DNNS (P084)**
*Rocio Nahime Torres, Federico Milani, Niccolò Zangrando and Piero Fraternali*

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**13:10 – 14:15 Lunch Break**

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**14:15-15:15 Session FP A20.6**
**Primary and Secondary Education**
**(Room Eduardo Viana II)**
*Chair: Roger Seiler*

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**MARKETING IMPULSE TO PROMOTE E-LEARNING IN BASIC AND SECONDARY EDUCATION (F056)**
*Nuno Sotero Silva and Luís Valadares Tavares*
**UNIVERSITY TRAINING FOR FUTURE PRIMARY SCHOOL TEACHERS ON AUTOMATIC FORMATIVE ASSESSMENT (F076)**
*Vittoria Bonanzinga, Francesca Casasso, Cecilia Fissore, Valeria Fradiante and Marina Marchisio*

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**14:15-15:05 Session FSP A20.7**
**eHealth Decision Support Systems**
**(Room Eduardo Viana III)**
*Chair: Pedro Isaias*

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**MINDSETPLUS: THE 'MANAGEMENT AND INFORMATION DECISION SUPPORT EPILEPSY TOOL' TO PROMOTE ASSESSMENT, GOAL-BASED SKILLS TRAINING, AND SERVICE LINKAGE FOR PEOPLE WITH EPILEPSY (S068)**
*Ross Shegog, Refugio Sepulveda, Katarzyna Czerniak, Rosalia Guerrero, Alejandra Garcia-Quintana, Robert Addy, Kimberly Martin, Latasha Jackson and David Labiner*
**A PARSIMONIOUS MACHINE LEARNING APPROACH TO DETECT INAPPROPRIATE TREATMENTS IN SPINE SURGERY ON THE BASIS OF PATIENT-REPORTED OUTCOMES (F058)**
*Lorenzo Famiglini, Frida Milella, Pedro Berjano and Federico Cabitza*

**14:15-15:15 Session FP B20.4**
**Usability**
**(Room Sousa Pinto)**
*Chair: Valeria Orso*

**COMBINED UX/UXI TAXONOMY FOR PROSUMER COMMONS IN SMART SUSTAINABLE CITIES (F026)**
*Aleksi Kajander and Maria Claudia Solarte-Vasquez*
**A COMBINED APPROACH FOR USABILITY EVALUATION OF AN E-COMMERCE WEBSITE: REMOTE USABILITY TESTING, EYE-TRACKING, AND SUS TECHNIQUES (F029)**
*Thanaa Saad Alsalem, Maymunah Abdullatif Alismail and Majed Aadi Alshamari*

**14:15-15:05 Session FSP B20.5**
**Data Mining Topics and Applications**
**(Room Eduardo Viana I)**
*Chair: Ajith P. Abraham*

**CLASSIFIER RANK - A NEW CLASSIFICATION ASSESSMENT METHOD (S039)**
*Ningsheng Zhao, Jia Yuan Yu and Krzysztof Dzieciolowski*
**FRAUD DETECTION IN AUTOMOTIVE INSURANCE DOMAIN USING MACHINE LEARNING (F017)**
*Md Abdul Masud Rana and Ahmedul Kabir*

**15:25 – Conference Tour and Dinner**

## Thursday, 21st July 2022

**08:30-19:00 Welcome Desk (Room Eduardo Viana IV)**

**08:45-09:55 Session FSP A21.1**
**Higher and Further Education**
**(Room Eduardo Viana II)**
*Chair: Nello Scarabottolo*

**GENESIS OF AN E-PLATFORM FOR LANGUAGE ENHANCEMENT (S064)**
*Adam Forrester*
**DIGITAL TRANSFORMATION IN FINNISH HIGHER EDUCATION: A PERSPECTIVE FROM A UNIVERSITY OF APPLIED SCIENCES (F019)**
*Jari Multisilta and Timo Mattila*
**GENERATING GLOBAL MODEL TO PREDICT STUDENTS' DROPOUT IN MOROCCAN HIGHER EDUCATIONAL INSTITUTIONS USING CLUSTERING (S074)**
*Khalid Oqaidi, Sarah Aouhassi and Khalifa Mansouri*

**09:05-09:55 Session FSP B21.1**
**Tools and Technologies Applied to Games**
**(Room Eduardo Viana I)**
*Chair: Katherine Blashki*

**A DEEP REINFORCEMENT LEARNING APPROACH TO THE ANCIENT INDIAN GAME - CHOWKA BHARA (S017)**
*Annapurna P. Patil, Sanjay Raghavendra, Shruthi Srinarasi and Reshma Ram*
**GAMIFICATION OF DISCUSSOO: AN ONLINE AI-BASED FORUM FOR SERIOUS DISCUSSIONS (F022)**
*Elena Bakhanova, Madiha Anjum, Jaime A. Garcia, William L. Raffe and Alexey Voinov*

**10:00-11:00 Session KL1 – Keynote Presentation**
**(Room Eduardo Viana I)**

**VISUALIZING THE COVID-19 PANDEMIC**
*Professor Xiaoru Yuan, School of AI, Peking University, China*

**10:00-11:00 Session FP A21.2**
**Connected Smart Cities**
**(Room Eduardo Viana II)**
*Chair: Aikaterini (Katerina) Bourazeri*

**SMART CITY DISTRICT SIMULATOR – HOW WE MADE A VIRTUAL SMART CITY DISTRICT COME ALIVE (F023)**
*Arian Ajdari, Philipp Neuschwander, Frank Elberzhager and Patrick Mennig*
**A METHOD OF ESTIMATION OF MOBILITY OPERATIONAL SERVICES FORMING PASSENGERS' TRAVEL TRAJECTORIES BASED ON EXCLUSIVE MAP MATCHING (F051)**
*Shuichiro Sakikawa, Takahito Ikuhara, Norihisa Komoda and Toru Fujiwara*

**09:00-11:00 Session FP A21.3**
**Life environment and ICT**
**(Room Eduardo Viana III)**
*Chair: Janet Liebenberg*

**EXPLORING CONSUMER ATTITUDE TOWARD SUSTAINABLE ENERGY-EFFICIENT APPLIANCE: PRELIMINARY FINDINGS FOR AUGMENTED REALITY APPLICATION (F113)**
*Gabriella Francesca Amalia Pernice, Valeria Orso and Luciano Gamberini*
**THE HUMAN IN THE HOME: PRIVACY INVASION RISKS OF SMART HOME APPLIANCES AND DEVICES (F036)**
*Kalala T Nshima and Roelien Goede*
**VIRTUAL REALITY APPLICATIONS IN AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW (F020)**
*Mohd Amran Md Ali, Mohammad Nazir Ahmad, Wan Salwina Wan Ismail and Nur Saadah Mohamad Aun*
**CYBERNETIC PHILOSOPHY OF DIGITAL PUBLIC GOVERNANCE: MODELING RECURSIVE SENSORY SYSTEMS (F096)**
*Konstantin S. Kondratenko*

**11:00-11:30 Coffee Break**

**11:30-13:05 Session FSRP A21.4**
**Distance Learning // Educational Management**
**(Room Eduardo Viana II)**
*Chair: Rusudan Makhachashvili*

**TEACHERS' DIGITAL COMPETENCES BEFORE AND DURING THE COVID-19 PANDEMIC FOR THE IMPROVEMENT OF SECURITY AND DEFENCE HIGHER EDUCATION (F048)**
*Marina Marchisio, Fabio Roman, Matteo Sacchet, Enrico Spinello, Linko Nikolov, Malgorzata Grzelak, Magdalena Rykala and Cristian-Emil Moldoveanu*
**DIGITIZATION INNOVATION IN UNIVERSITY EDUCATION (F021)**
*Marja-Liisa Tenhunen*
**ASSESSMENT OF DISTANCE LEARNING MODES FOR TERTIARY EDUCATION IN PAKISTAN (S058)**
*Jalil Raza, Tahira Anwar Lashari, Sana Anwar Lashari, Hira Raza and Saima Anwar Lashari*
**HOW ARTIFICIAL INTELLIGENCE HAS CHANGED E-LEARNING EDUCATION IN THE META ERA (R038)**
*Kyriakos Kouveliotis and Maryam Mansuri*

**11:30-12:45 Session FRP A21.5**
**eHealth Applications**
**(Room Eduardo Viana III)**
*Chair: Mário Macedo*

**FELIX THE DIGIBUD: UNVEILING THE DESIGN OF AN ICT-SUPPORTED INTERVENTION FOR OCCUPATIONAL STRESS MANAGEMENT (F047)**
*Manoja Weerasekara and Åsa Smedberg*
**AN INCENTIVE MODEL FOR PATIENT ADHERENCE TO A HEALTH APP (R026)**
*Cândida Sofia Machado and Cláudia Cardoso*
**SINGLE MR IMAGE SUPER-RESOLUTION USING GENERATIVE ADVERSARIAL NETWORK (F039)**
*Shawkh Ibne Rashid, Elham Shakibapour and Mehran Ebrahimi*

**11:30-13:10 Session FSP B21.2**
**User studies and fieldwork**
**(Room Eduardo Viana I)**
*Chair: Katherine Blashki*

**RETHINKING THE SHOPPING EXPERIENCE: A QUALITATIVE EXPLORATIVE STUDY ON 3D WEB AND AR FOR DISPLAYING AND SELLING GOODS (F051)**
*Valeria Orso, Giovanni Portello, Leonardo Pierobon, Alice Bettelli, Merylin Monaro and Luciano Gamberini*
**ON THE IMPACT OF THE USER CONTEXT CRITERIA IN THE DETECTION OF MOBILE USER INTERFACES DEFECTS (F077)**
*Mabrouka Chouchane and Makram Soui*
**USING AN INTENTION PREDICTION ALGORITHM TO DISPLAY ADAPTIVE WARNINGS OF CYCLISTS (S027)**
*Lisa Graichen, Matthias Graichen and Leon Gärtner*
**SPEAKING, TOUCHING OR GESTICULATING? HOW DOES IN-VEHICLE INTERACTION TYPE AFFECT DRIVER DISTRACTION? (S028)**
*Lisa Graichen, Matthias Graichen and Lena Hanstein*


**13:05 Best Paper Awards Ceremony and Closing Session**
**(Room Eduardo Viana III)**

*Prof. Pedro Isaías and Mário Macedo*


**13:10 – 14:00 Lunch Break**


**14:00-16:00 Session FSP B21.3**
**Data Management // Data Quality**
**(Room Eduardo Viana II)**
*Chair: Ajith P. Abraham*

**AN EFFECTIVE HYBRID DATA ANALYTICS TECHNIQUE FOR A 360-DEGREE VIEW OF CUSTOMER DATA (S058)**
*Majdah AL Nefaie, Siva Muthaly and Siva Muthaly*
**ADVANCED DATA PROCESSING METHODS IN AN INTELLIGENT HEALTH GATEWAY (F020)**
*Mezui Eya'a Guy Lysmos and Mostafa Hanoune*
**SOCIAL MEDIA DATA VISUALIZATION: A REVIEW (S029)**
*Hanan Asiri and Mehmet Sabih Aksoy*
**A MEMETIC ALGORITHM FOR OPTIMIZING THE ASSIGNMENT OF TABLES ON RELATIONAL DATABASE STORAGE UNITS (F050)**
*Arturo Lucas, Rony Cueva and Manuel Tupia*
**HARNESSING WEAK SUPERVISION TECHNIQUES IN WEB MINING TO IMPROVE OVERALL DATA QUALITY (S062)**
*Allen ONeill*


**14:00-16:00 Session FP B21.4**
**HCI and Design education // Measurement of success of emotional technology / interfaces**
**(Room Eduardo Viana III)**
*Chair: Janet Wesson*

**CONTRIBUTIONS OF AUGMENTED REALITY IN ARCHITECTURAL PROJECT REVIEW (F019)**
*Gaëlle Baudoux, Maxime Grella and Pierre Leclercq*
**METHODS FOR THE EVALUATION OF UX OVER TIME (F087)**
*Emmanuel Mkpojiogu, Obianuju Okeke-uzodike and Victor A. Omopariola*
**IDENTIFICATION OF FACTORS AFFECTING THE LEARNERS' MOTIVATION IN AN E-LEARNING SCENARIO FOR INDUSTRIAL DESIGN EDUCATION (F092)**
*Naveen Kumar, Abhijeet Kujur and Jyoti Kumar*
**UNDERSTANDING USERS' UX NEEDS THROUGH THE LENSES OF PSYCHOLOGICAL NEEDS THEORIES: USERS' EXPECTATIONS AND FELT EXPERIENCES (F098)**
*Emmanuel Mkpojiogu, Obianuju Okeke-uzodike and Victor A Omopariola*

**14:10-16:00 Session FP B21.5**
**Serious Games and entertainment – applications, critiques // Emerging practices**
**(Room Eduardo Viana I)**
*Chair: Ladislava Zbiejczuk Suchá*

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**GAME GRAPHICS AND EFFECTIVE LEARNING: A REVIEW OF VISUAL COMMUNICATION RESEARCH IN SERIOUS GAMES (F029)**
*Hua Bai, Ran Zhang, Björn Berg Marklund and Ulf Wilhelmsson*
**THE EMERGENT ASPECT OF CLIMATE CHANGE IN VIDEO GAMES: A HISTORICAL REVIEW (F045)**
*Khalil Morad El Ghilali, Spiros Papadopoulos and Iman Meriem Benkirane*
**GAMING SKILL DEMOGRAPHICS: AN ANALYSIS OF CONSISTENCY IN VIDEO GAME RESEARCH (F056)**
*Elizabeth A. Matthews, Irina Koleva and Sujana Basnet*
**FLOW, ITS STRANDS AND MICROFLOW IN THE GAME DESIGN OF HORROR GAMES (S047)**
*Reinaldo Augusto de Oliveira Ramos and Rafael Diogo Rossetti*

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**16:00-16:30 Coffee Break**

**16:30-18:30 Session FP B21.6**
**Theory and Practice in Modern Computing**
**(Room Eduardo Viana II)**
*Chair: Brenno Menezes*

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**INDUSTRIAL MODELING AND PROGRAMMING LANGUANGE (IMPL) FOR COMPLEX DATA ANALYTICS AND DECISION-MAKING PROBLEMS (F025)**
*Brenno Menezes, Jeffrey Kelly, Munier Elsherif and Robert Franzoi*
**SYMBOLIC MODEL CHECKING FOR MODULAR SYSTEMS (F032)**
*F. Ouazar, M. C. Boukala and M. Ioualalen*
**DESIGN OF PRODUCTS AND SERVICES FOR THE AUTOMATION OF CELL CULTURE IN THE PRODUCTION OF ADVANCED THERAPY MEDICINE (F027)**
*Dalia Gallico and Pietro Fissore*
**SAFETY-RELATED COMPUTERIZED EMBEDDED SYSTEMS WITH HETEROGENOUS REDUNDANCY (F017)**
*Joseph Khattar, Eike Hahn, Samer Telawi, Michael Schwarz and Josef Boercsoek*

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**16:30-19:00 Session FP B21.7**
**Computer Vision // Visualization**
**(Room Eduardo Viana III)**
*Chair: Alcínia Zita Sampaio*

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**HEATMAP MATRIX: USING REORDERING, DISCRETIZATION AND FILTERING RESOURCES TO ASSIST MULTIDIMENSIONAL DATA ANALYSIS (F015)**
*Miguel Mechi Naves Rocha and Celmar Guimarães da Silva*
**3D POSE ESTIMATION BY GROUPED FEATURE FUSION AND MOTION AMPLITUDE ENCODING (F029)**
*Jihua Peng, Yanghong Zhou and P.Y. Mok*
**IDENTIFYING WEAR PARTICLES WITH THEIR SHAPE ATTRIBUTE (F088)**
*Mohammad S. Laghari, Abdulla M. S. Alneyadi, Ahmed Y. Alawlaqi and Amr Maraqa*
**DETECTION OF FASHION LANDMARKS BASED ON POSE ESTIMATION AND HUMAN PARSING (F023)**
*Honghong He, Yanghong Zhou, Jin-Tu Fan and P. Y. Mok*
**USING REORDERABLE HEATMAPS AS A SUPPORT FOR DATA ASSIMILATION IN PETROLEUM RESERVOIR MANAGEMENT AND DEVELOPMENT PROCESSES (F049)**
*Gabriel Paulo Turato, João Gabriel Nogueira Duarte de Oliveira, Antonio Alberto S. Santos, Denis José Schiozer and Celmar Guimarães da Silva*

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**16:30-18:20 Session FP 21.8**
**Supporting user populations with Physical Disabilities // Emotional Design issues / methods / experiences for novel interfaces**
**(Room Eduardo Viana I)**
*Chair: Ashraf Khalil*

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**USING INFORMATION VISUALIZATION TO SUPPORT THE SELF-MANAGEMENT OF TYPE 2 DIABETES MELLITUS (F021)**
*Janet Wesson and Meggan Naude*
**CORPORATE DIGITAL RESPONSIBILITY AND ACCESSIBILITY IN DIGITAL SERVICES (F031)**
*Terhi Kärpänen*
**TELEINCLUSIVE LEARNING: AN EXPLORATORY STUDY ON STUDENTS' EXPECTATIONS OF USING TELEPRESENCE ROBOT FOR ATTENDING CLASSES (F066)**
*Luciano Gamberini, Gabriella Francesca Amalia Pernice, Valeria Orso and Daniela Mapelli*
**COMPARATIVE STUDY ON THE CHARACTERISTICS OF METAVERSE EXPERIENCE: AN EXPERIENCE ECONOMY MODEL PERSPECTIVE (P038)**
*Qiyuan Tang, Sujin Bae and Ohbyung Kwon*
**CO-EXPERIENCE AND DIGITAL INCENTIVES: UNDERSTANDING PURCHASE INTENTION IN THE P2E METAVERSE (P041)**
*Sujin Bae, Qiyuan Tang and Ohbyung Kwon*

**08:15-13:30 Welcome Desk (Room Eduardo Viana IV)**

**08:30-11:15 Session FP 22.1**
**Image Processing**
**(Room Eduardo Viana II)**
*Chair: Angel Sappa*

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| **AR IN VR: AUGMENTED REALITY CUES IN 360-DEGREE STEREOSCOPIC TELEPRESENCE FOR REMOTE COLLABORATION AND MAINTENANCE (F048)** |
| *Furkan Kaynar, Markus Hofbauer, Asa MacWilliams, Joseph Newman, Andreas Hutter and Eckehard Steinbach* |
| **DOMAIN ADAPTATION IN IMAGE DEHAZING: EXPLORING THE USAGE OF IMAGES FROM VIRTUAL SCENARIOS (F072)** |
| *Angel D. Sappa, Patricia L. Suárez, Henry O. Velesaca and Darío Carpio* |
| **DESIGN ELEMENTS EXTRACTION BASED ON UNSUPERVISED SEGMENTATION AND COMPACT VECTORIZATION (F026)** |
| *Hong Qu, Yanghong Zhou, K.P. Chau and P.Y. Mok* |
| **INTERPOLATION AND CONTEXT MAGNIFICATION FRAMEWORK FOR CLASSIFICATION OF SCENE IMAGES (F077)** |
| *Anas Tukur Balarabe and Ivan Jordanov* |
| **MULTI-MODALITY IMAGE SUPER-RESOLUTION USING GENERATIVE ADVERSARIAL NETWORKS (F063)** |
| *Aref Abedjooy and Mehran Ebrahimi* |
| **WSSL: WEIGHTED SELF-SUPERVISED LEARNING FRAMEWORK FOR IMAGE-INPAINTING (F020)** |
| *Shubham Gupta, Rahul Kunigal Ravishankar, Madhoolika Gangaraju, Poojasree Dwarkanath and Natarajan Subramanyam* |

**11:15-11:45 Coffee Break**

**11:45-13:15 Session FSRP 22.2**
**HCI and Design education**
**(Room Eduardo Viana II)**
*Chair: Katherine Blashki*

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| **A FRAMEWORK FOR ETHICS EDUCATION IN PERSUASIVE UX DESIGN (F084)** |
| *Sanju Ahuja and Jyoti Kumar* |
| **GENDER CLASSIFICATION USING SINGLE IMAGE PER PERSON (F042)** |
| *Rubata Riasat, Abdul Hannan Sadiq and Faizan Ahmad* |
| **FORMAL EDUCATION AND THE READINESS FOR WORK IN UX: THE RESULTS FROM A MIXED-METHODS RESEARCH STUDY (S055)** |
| *Ladislava Zbiejczuk Suchá, Jáchym Kubáček and Jitka Bartošová* |
| **THE LUDIC SPECTACLE AND MEDIATIZED PARTICIPATION IN ESPORTS: POLAND AND HONG KONG (R020)** |
| *Mateusz Felczak* |

**13:15 Best Paper Awards Ceremony and Closing Session**
**(Room Eduardo Viana II)**

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| *Profs. Katherine Blashki and Pedro Isaías* |